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OCTOBER 30, 1907.

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Is There a Limit?

ABOUT a decade ago the American Surety Building, at 100 Broadway, New York City, twenty stories high, eclipsed anything in the way of high buildings which had yet been erected, and it was popularly believed that it would not be surpassed for years, if ever. Since then many other buildings have cast this into the shade; the Singer Building having 41 stories, and now the Metropolitan Life Building is being rapidly raised to its designed height of 48 stories. Besides these, there are two 26-story buildings, three 25-story buildings, two 23-story buildings, four 22-story buildings and nine 20-story buildings. Of buildings having between 10 and 20 stories there are now in the city 516. Several questions suggest themselves with reference to this piling up of story upon story. Is there a limit

to the height which such structures can be carried? What will be the effect upon health, light, noise and many other features of city life should all buildings be raised to a height of even 20 stories, thus making of every street a canyon? Possibly even more important is the question as to fire risk involved in such construction. We are told by the advocates of these buildings that they are more nearly fireproof than any others in the city, and they are able to cite instances to back their claims. But should a fire gain any headway in the upper floors of such a building, how is it possible to reach it with any considerable volume of water, more than can be contained in small roof tanks located on the buildings themselves? And in a street lined with such buildings, in which fires are raging practically unrestricted in the top hundred feet or so, would not the falling glass and other debris make it impossible for firemen to remain in the street below to fight the flames in even the lower stories? Continuous rows of "sky-scrapers" will present conditions which are absent while they are widely scattered.

A Department of Street Control

THE Merchants' Association of New York City, in making recommendations to the Charter Revision Commission of that city relative to desirable changes in the City Charter, urges the creation of a new department of street control, and the matters which it would place under the jurisdiction of said department are interesting as an illustration of the great variety of subjects and structures which would naturally need to be dealt with by such a department. These matters are: regulating and grading of highways; construction and maintenance of pavements and sidewalks; openings in streets, pavements or sidewalks, and the restoration of the pavement or sidewalk disturbed by such openings, including pavement removed by the Department of Water Supply; cleaning the streets and disposing of street wastes; control of building materials and other encumbrances on the street; also of the operation in the streets of gas, electric lighting, telephone, steam and other public service corporations; lighting the streets; construction and maintenance of sewers; construction and control of vaults under sidewalks, openings into vaults, protection of areaways, hoistways, etc.; show cases, awnings, obstruction of sidewalks, structures within the stoop lines, and similar street encumbrances. It also proposes a progressive license fee, increasing with the time of use, for the storage of building materials in the streets. Also that when a new pavement is to be laid, or a pavement opened for any large construction work, notice be sent to all public service corporations to the effect that the pavement will be opened at a specified time, and that such underground structures as they desire to make must be made forthwith, and that no public service corporation be permitted to make any opening for the installation of mains in such street for the space of one year thereafter. In the case of resident streets that, when water and gas pipes and electric wires

are laid in the street, service connection for each lot be extended from the mains to the curb lines in order that when connection with any residence is thereafter desired such connection may be made without breaking the street paving. An official map of underground structures in the streets is recommended, since the absence of such a map causes great delay in the construction of underground works, the removal of needlessly great expansion of pavement, and the unduly long continuance of openings in the pavements. The association also recommends permission to use bitulithic and other patented pavements. Special works of great importance and extent, the association believes, should be conducted by means of special non-political commissions appointed to serve during the continuance of the work, after which the completed work shall be transferred to one of the permanent departments of the city and the commissioner discharged; special reference in this case being made to the construction of the new Catskill water system under the control of a special Board of Water Supply.

We believe that most engineers who are conversant with conditions in our larger cities will agree as to the general advisability of these recommendations; but we think that one more class of street work should have been included in the list, namely, the laying of water mains. Present experience in the city of New York is that the work of the Water Department is less under the control of the Department of Highways and does more injury to the city pavements than that of any other private or public disturber of the streets—perhaps more than all of the others put together. Not once or twice, but many times, has the Water Department torn up a street from end to end within two or three months after the laying thereon of a new pavement, and this in spite of the fact that it had received notice long before of the contemplated paving of said streets. We do not mean that the Department of Street Control should, by its own workmen, lay the water mains, nor do we understand the recommendations referred to above to imply that the sewers would be directly laid by this Department, but rather that it should have sole jurisdiction over such work, especially as to times and methods of construction.

In small cities there is little conflict among these various services, since all are under the control of a City Engineer, or the responsibility shared at most by a Street Superintendent. But in the larger cities the fact that sewer departments, water departments and others can, at their will, tear up street paving without consulting the department which is responsible for it, has produced intolerable conditions. The reason for placing certain of the above utilities under the control of the department may not at first be apparent, such, for instance, as cleaning and lighting the streets; but the cleaning of streets and the maintenance of sewers are more or less intimately connected, especially with the advent of street flushing machines; also the cleaning of catchbasins and of streets can be performed more economically if the removal of material from both be performed by the same carts.

The list given is so extensive as to include most of the functions which would naturally appertain to the Depart-

ment of Public Works, and for cities of the second-class or smaller it appears to us that such a department, to have jurisdiction over all the public works of the city, would, in many cases, be advisable.

STREET LIGHTING IN LOS ANGELES

Ornamental Posts Erected by District Assessment—Cost of Posts and of Lighting Same—Incandescent Lamps for Artistic Effects

AN interesting paper describing ornamental street lighting in several cities was read before the American Society of Municipal Improvements at its last convention by Edwin A. Fisher, City Engineer of Rochester, N. Y. The description of the methods employed at Los Angeles, Cal., which was contributed by R. H. Manahan, the City Electrician, was exceptionally complete, and is given below:

"The first lighting by incandescent lamps on ornamental posts in our business streets was taken up by the merchants and property owners on Broadway, working under their organization known as the Broadway Improvement Association. This Association, by means of subscriptions from property owners and merchants along the street, raised funds for installing 135 cast-iron ornamental posts. These posts are located at about 120-foot intervals along each side of the street and originally contained an aggregate of 384 candle-power, in twelve 32-candle-power incandescent lamps. This would be equivalent to nearly thirty-seven 450-watt arc lamps per block, there being twelve posts per block on this particular street. The cost of lighting these posts was assumed by the city, and, as one can readily see from the above comparison, was a very expensive method when considered apart from its advertising and artistic features; and, in view of other streets asking for the same improvement, the experiment was tried of reducing the aggregate candle-power one-half, with very satisfactory results both financially and from the standpoint of illumination, the general effect looking down the street being practically the same.

"Owing to the difficulty which the Broadway Association had in securing subscriptions from all the property owners on the street, an act was passed at the next session of the State Legislature enabling property owners along any street to institute proceedings for improvements of this character. Upon favorable action by the City Council an assessment district was formed, upon which the cost of the improvement was levied in the same manner as is done in ordinary street improvement work. The three other principal streets upon which ornamental posts are now installed used the assessment method, and it has been very satisfactory in operation.

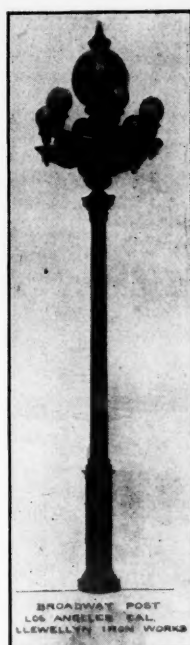
"We have two general types of posts, the four-arm and the six-arm, with 16-inch and 18-inch top globe. The six-arm post is the one adopted by the Broadway Association, and the present arrangement of lamps consists of three 32-candle-power lamps in the 18-inch top globe and one 16-candle-power lamp in each of the 8-inch enclosing frosted globes. The four-arm post used on the other



FOUR-ARM POST



SIX-ARM POST



streets contains three 8-candle-power lamps in each 12-inch globe on the arms and three 32-candle-power lamps in the 16-inch top globe.

"Provision has been made on the later posts, erected for extra circuit wires, so that they may be used for decorative lights strung along or across the streets. The connections to these posts were installed by the respective lighting companies at their own cost; having underground conduits already in the street, they simply ran the necessary service wires from their manholes to the posts at a nominal expense.

"Lighting hours for these posts vary according to conditions. On the main business streets all posts are lighted until midnight, and after midnight two posts at each street intersection. In the semi-residence section, all posts are lighted until 10 o'clock and the balance until 12 or later, as desired by the property owners.

"In the following tabulated form I have shown the extent and original cost of installing the posts, including globes and necessary wires to the base of the post, at which point the lighting companies connect their service wires; also the total cost, and cost per front foot for current for one year.

ORNAMENTAL POSTS

STREET	Length in Feet	No. of Posts	Candle Power per Post	Total Candle Power	Cost of Installation	Cost per Front Foot	Cost Per Post
Hill.....	8,445	164	102	31,500	\$17,204.00	\$0.04	\$105.25
Broadway.....	7,125	135	102	25,900	14,000.00	1.00	103.00
Spring.....	5,750	132	102	25,300	14,628.00	1.06	110.00
Main.....	9,420	163	102	31,300	19,000.00	1.10	116.00
Totals..	5.8 Miles	594	102	114,000	64,922.00		

COST OF LIGHTING OF ORNAMENTAL POSTS

STREET	Rate per K.W. Hour	Yearly Cost	Cost per Front Foot
Hill.....	32 cts.	\$0,200.00	\$0.50
Broadway.....	32 "	7,780.00	.556
Spring.....	32 "	7,625.00	.65
Main.....	32 "	9,810.00	.568
Totals.....	31 "	\$31,562.50	

"In view of the rapid improvement being made in incandescent lamps, both as regards efficiency and candle-power, I believe that the lighting of streets, both in the business and residence sections, can be done quite economically considering the artistic effects that can be obtained with ornamental posts and incandescent lamps.

"In connection with the lighting of these posts by the various companies, the entire maintenance of the posts is made a part of every contract, this including all necessary cleaning and washing of the enclosing frosted globes. All lamps are renewed at the expiration of 800 hours' burning, so that the posts may be as uniformly lighted as possible, lamps burning out or becoming defective before the 800-hour period being, of course, renewed immediately.

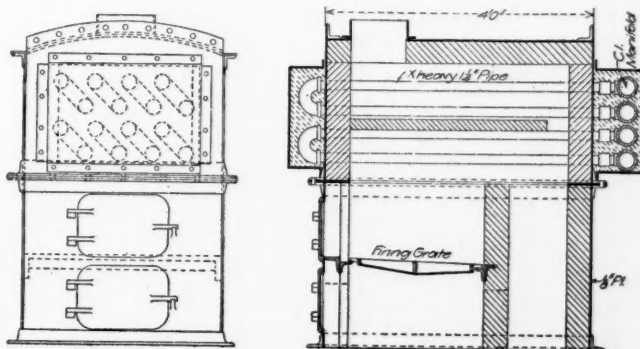
"The cost of lighting 64 streets has recently been taken up by the city with the respective property owners, and the city agrees to assume one-half such expense, the balance being collected by the method outlined in the legislative act to which I referred. We have before us petitions for four other streets for similar improvements, but in these cases the entire cost for installation and current will be paid by the property owners."

A CINCINNATI ASPHALT PLANT

A PLANT which is of considerable interest has been constructed in Cincinnati, O., for handling both asphalt and bitulithic pavements, and having a capacity of about 2,000 square yards in ten hours. This plant was described by Charles Brossman in a paper before the Indiana Engineering Society, as follows:

"The illustration, Fig. 1, shows the entire layout of the plant. The facilities for handling raw material from switch above bins are exceptionally good. The storage bins for sand and stone have a capacity of 1,000 cubic yards. Along these bins run two belt conveyors from ends to center. These discharge into an elevator feeding the driers. The driers discharge the heated material by an elevator into a hopper above the mixer, the material being kept at the required temperature by superheated steam. The sand and stone are drawn off when required for the mixer.

"The asphalt, where barrels are used, is conveyed by a barrel elevator to the platform above the mixing

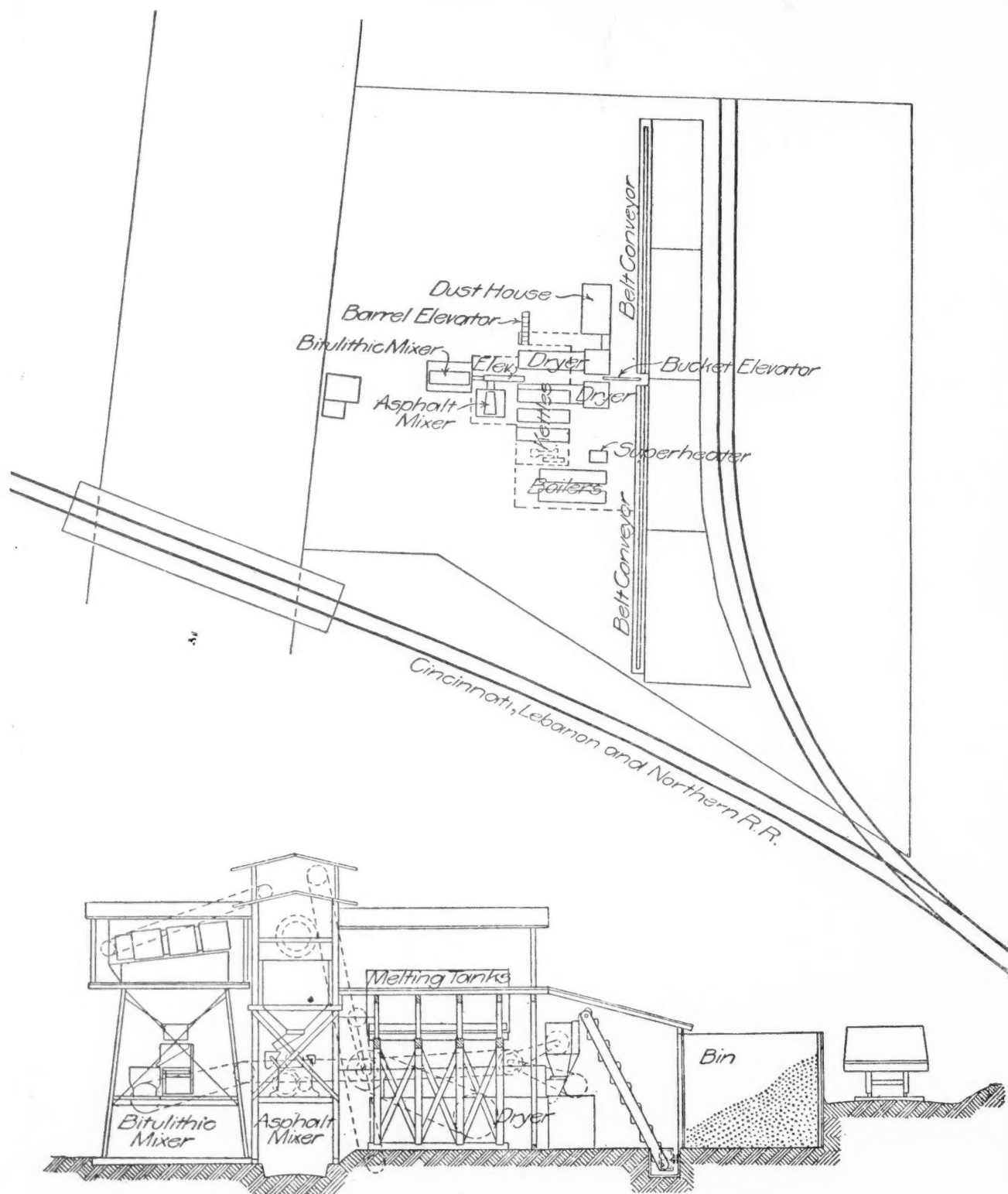


ASPHALT HEATER—END VIEW AND LONGITUDINAL SECTION

kettles, which have a combined capacity of 25 tons. These kettles have agitators, both mechanical and air being used. The material is heated by means of a steam jacket, using superheated steam, which is heated by a special superheater in which the temperature can be regulated to the required degree. This superheater is shown in Fig. 2. It supplies steam to the melting kettles and also to the sand and stone above the asphalt mixer. The sand driers are of Cummer make, very heavy and strong, and have a combined capacity of 12

tons per hour. The boiler plant consists of two locomotive-type boilers of 100 horsepower capacity. The engine is a 12x16 Lane and Bodley engine, running at 150 revolutions per minute. The ordinary attachments of a small boiler plant are included, such as feed water heater and boiler feed pumps, also auxiliary injectors for the boilers; in fact, the plant is complete in every detail.

"In connection with the plant is installed the regular Warren outfit for mixing bitulithic. This consists of



PLAN AND CROSS-SECTION OF CINCINNATI ASPHALT PLANT

the Warren multiple screen and bin and the mixer, the whole being placed next to the asphalt mixing structure. The stone or sand coming from the driers can be diverted into either the asphalt or the bitulithic mixing plant by means of a gate. The piping from the kettles for melted material is arranged to run to both parts of the plant."

In reply to questions, Mr. Brossman stated that a small asphalt plant costs four or five thousand dollars. A municipal plant built by him for Pittsburg, Pa., with a capacity of 500 square yards in ten hours, cost \$15,000. This included the steam rollers and all necessary tools; the asphalt plant alone costing about eight or nine thousand dollars.

Sliding Scale of Hydrant Rental

THE city of Charleston, S. C., is in the throes of a struggle to arrive at a satisfactory agreement with the local water company, and in connection with this a committee of the City Council has made recommendations for a sliding scale of hydrant rental which, as far as we can recall, is unique in the history of water works contracts. This recommendation is that the maximum specifications for total solids, exclusive of common salt, hardness, chlorine, etc., which were originally proposed, be entirely eliminated and a sliding scale substituted, whereby the company may furnish water of any hardness from 45 to 65, of any chlorine from 85 to 100, of any total solids from 75 to 150, with the proviso that after certain limits are reached the city may, for each point of 5 parts, deduct from the hydrant rental a certain sum of money; but that no matter what the number of parts of total solids, chlorine, or hardness, the sum that is deducted in any one year shall not exceed \$19,000—in no one year shall the water company be paid less than \$25,000—for hydrant rental, though should the above limits be exceeded the city may, if it so desires, pronounce the water not satisfactory.

Paving Between Tracks

EXPERIENCE has shown that probably no one thing does more towards hastening the destruction of city pavements than the presence of street railway tracks therein, especially where proper precautions as to style of rail and method of construction have not been taken. One effect of the track is to confine traffic to a comparatively narrow way between it and the curb, thus concentrating the wear of wheels and hoofs to a small percentage of the total width. Even worse than this is the wear produced by wagons traveling with one wheel in the rail, which inevitably produces ruts at a distance outside of the track equal to the gauge of the wheels. Still a third concentration of wear is caused by wagons traveling with their wheels in both the rails, or in one and a few inches from the other, depending upon their gauge, in which cases the wear from the horses' hoofs is confined to a space midway be-

tween rails, and ruts are formed parallel to and a few inches from each rail. There is also another way in which destruction is brought to the pavement by rails which have not been solidly laid, caused by the motion of the rail, which tends to loosen or disintegrate the paving in contact with it. This is especially observable where asphalt is carried directly up to the rail, and in most cities this construction is avoided and brick or block paving is used for a strip along each side of each rail.

The effect of street railways upon the cost of pavement maintenance is appreciated by paving contractors, as is shown by the fact that where an opportunity is offered to discriminate, in bidding, between maintaining pavements on streets with and on those without tracks, they almost invariably charge quite a little higher for the former.

Paving between tracks and along rails was the subject of a paper recently read before the Indiana Engineering Society by B. J. T. Jeup, of Indianapolis. He stated that in that city they have various forms of construction: asphalt between tracks with a stretcher of brick or granite on each side of the rail, or a header of brick with two stretchers of brick alternating; also asphalt placed directly against the rail, or against a Hayden block on the inside of a girder rail.

"With brick or stone block pavement, the practice has been, in this and other cities, to put in nose brick or nose block, or a cast-iron block on the inside of the rail, with the paving between the rails laid in courses at right angles to the rail. The paving of the 18-inch strip on the outside of the rail has been either of brick or stone block, laid in courses at right angles to the rail, or in courses parallel to the rail. Some cities are still using wooden block between the tracks, laid in a manner similar to the method of construction with paving brick. The experience of this city is opposed to the use of creosoted wooden block, however well they may be treated, as a paving material between tracks. It is only a question of a short time until sufficient oil has exuded from the blocks to enable them to absorb water, when they swell and seriously interfere with the alignment of the track.

"Sheet asphalt, in fact any sheet pavement is, as a rule, very unsatisfactory for paving between the tracks, and has only given partial satisfaction with heavy grooved rail construction. It is now the generally accepted opinion that the paving between the track should be some form of block pavement, either brick or stone or asphalt block, a pavement which can be laid by the railroad company, and which can be taken up and replaced by them when joints, ties, bonds, etc., are to be renewed. Such a pavement can be repaired more promptly when so directed by the city, because the company need not await the pleasure or convenience of paving companies to make repairs. In this city brick is now almost universally used for paving the space between the rails. I am of the opinion that a heavy T rail construction with a large nose block

forming a groove, as before described, and modified to remove some minor objections which have developed, together with a brick pavement laid on well built Portland cement concrete base, will be entirely satisfactory to the authorities on all streets which are to be permanently improved."

In discussing this A. C. Kenyon stated that he did not believe in the use of asphalt blocks as nose blocks along the rail, as the small particles of stone of which the block is composed grind out very quickly, as quickly as brick or more so, although the blocks are more noiseless. The creosoted block which they have used has not given satisfaction because of its spreading the rails (probably by absorbing water). He suggests the use of a line or two of creosoted block next to the rail, with the corners sawed off, stating that the Chief Engineer of one of the St. Louis lines considered this the best construction which had been tried in that city.

John O. Porter, City Engineer of Muncie, Ind., stated that their Board of Works specified ordinary brick next the rail, with a row of raised brick next to it, and that this had not been very satisfactory for vehicles. Mr. Emmons, of Fort Wayne, Ind., stated that that city had laid a mile and a half of Nelsonville stretchers and fillers within the last two years, and that this construction had given very good satisfaction, except that the nosing was not deep enough for the flanges of the car, which consequently chipped off the edges. He described the construction as consisting of two sets of blocks, one a wedge shaped piece that fits against the web of the rail and the other a regular brick with the edge chipped off. He believed that it was giving good satisfaction in Columbus, Ohio.

Street Traffic Regulations

In his Presidential Address, delivered, October 3, before the Civil and Mechanical Engineers' Society of England, W. Noble Twelvetrees made some practical suggestions "for the improvement of street junctions, in such a manner as to provide more adequately and more conveniently for the regulation of traffic in the central and suburban districts of the metropolis." The greatest hindrance to vehicular traffic is, he says, due to the compulsory stoppages of first one line of traffic and then the other at the intersection of their routes, and to the endeavors of drivers to cross comparatively open spaces along the shortest possible lines.

The traffic police regulate the intermittent stoppage of traffic at street junctions in most cases as well as could be expected; and at most intersections of not exceeding two streets their duty is comparatively easy. But the process is unavoidably attended with annoying delays, time being occupied in checking the movement of one stream of traffic and in starting and accelerating it again, in addition to that actually occupied by the passage of the other line of traffic.

After referring to the methods of constructing bridges and subways which have been suggested and even adopted in some instances in this country as well as in England,

he suggests the system of gyratory traffic regulations as infinitely preferable, and possible of adoption at some existing junctions without any expenditure worth considering and at others without serious cost. "To illustrate the system of gyratory traffic movement, let us take the case of a junction such as that shown in Fig. 1—

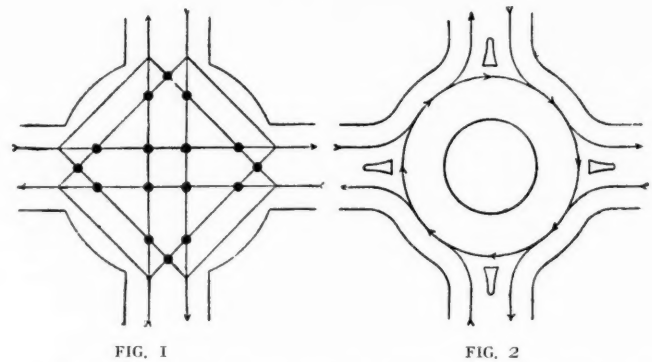


FIG. 1
FIG. 2
In England vehicles turn to the left, instead of to the right. For American conditions all the arrows should be reversed.

where four streets converge upon an area sufficient to permit of continuous locomotion. To avoid unnecessary complication, only one line of traffic in each direction is considered in each street, and the drivers of vehicles are assumed to take the shortest cut to every possible destination. The result is sixteen points of conflict leading to hopeless confusion, the only lines free from intersection being those along the outside. A little reflection will show that if vehicles were prevented from penetrating into the central area, where conflict is so pronounced, and were compelled to follow a circular line, there could be no points of intersection. On the contrary, there would be a gyratory procession, receiving and distributing traffic along tangential curves at each of the four branches.

"Fig. 2 shows the same hypothetical junction with gyratory traffic regulation, absolutely obviating all points of conflict, and reducing the number of converging and diverging lines from twenty-four to sixteen. At the center of the junction is a circular refuge, and at the mouth of each street a refuge, whose sides should be curved sufficiently to act as a training wall, guiding the flow of traffic in the required directions." This system was, Mr. Twelvetrees says, first proposed by Mr. Holroyd Smith about ten years ago and has recently been advocated in both Paris and Berlin. With more than one line of traffic there would be concentric circles of gyratory movement, but the intersections of these would be much less than those caused by the direct-line method, and this objection would be more than counterbalanced, he believed, by the avoidance of confusion, stoppages and delays, by the additional safety assured to the foot passengers, and by the far smaller number of police officers required for traffic regulation.

The isles of safety could be used as sites for drinking fountains and public monuments, public convenience stations, or even small gardens. Stations for underground railways also could be located in the central isles.

CONTRACTORS' LIABILITY FOR FAILURE

**If Plans and Construction Methods Are Dictated by the City
It Cannot Hold Contractor Responsible
for Resulting Defects**

A VERY interesting case was decided October 15 in New Orleans in the Civil District Court, involving, as it did, a point which has formed the basis of several suits in the past, in all of which it has, we believe, been decided in the same way. The general principle involved in all these was: Can a contractor be held responsible for the effectiveness of a construction, every detail of which was specified by others, which specifications he followed as carefully and conscientiously as was practicable? The answer, we believe, has always been that he could not be so held, unless every detail of the construction was specified before the bidding and no modifications of any kind made therein by the engineers or others in authority subsequent to the signing of the contract.

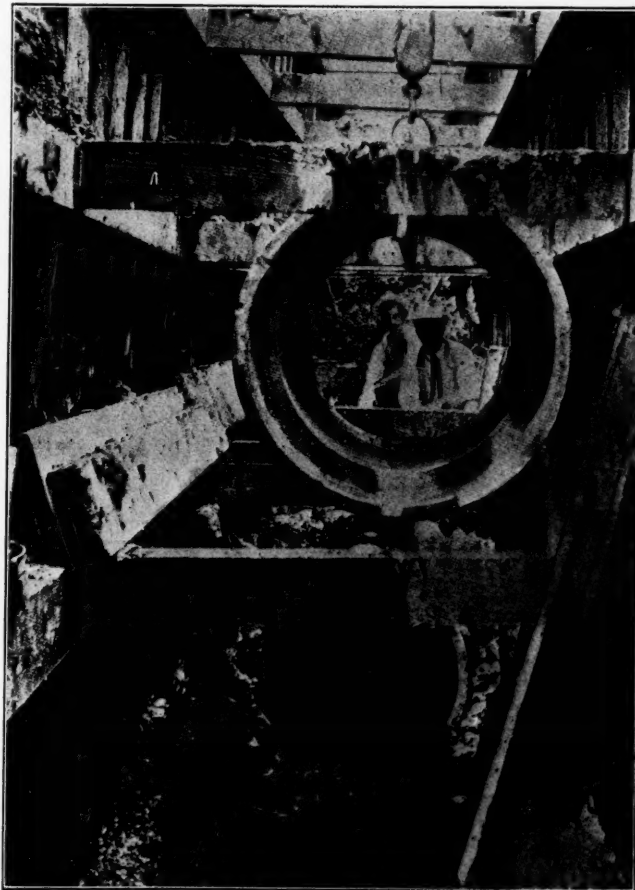
The suit referred to was one brought by T. J. Shea against the City of New Orleans to recover money for the construction of sewers, which money was withheld because of alleged defective work whereby certain sections of the sewer settled and opened at the joints, and were rendered useless thereby. There is no denial by the contractor that such settlement and other damage to the sewers did actually take place. But the records show that he had repeatedly, during construction, requested the engineers to order foundations placed under the sewers, but without succeeding in obtaining such permission.

The physical conditions here were somewhat unusual. The excavation for much of this sewer, which was laid about eighteen feet deep, was through clay. This is underlaid with sand containing water under pressure, and where the clay was excavated too close to the sand—in some cases the excavation ran into the sand itself—this and the water were forced up, allowing the clay and the pipes it supported to settle. Cradles of plank were used to overcome this difficulty, but in some instances these were terminated between manholes, and the joints at these points broke, either by the unsupported pipes settling or by the cradle rising by flotation.

In his finding, the Judge states, "if the plaintiff was untrammelled in the exercise of his discretion, in the means to prosecute the work, and the manner and mode of construction, the time when and the force and material with which the same should be carried on, and failure resulted, it is clearly his duty to repair his failures. Furthermore, he would be responsible for all loss and damage inflicted thereby. If, however, the plaintiff was only an administrative agency, to economically execute the orders of the defendant,—orders given by its engineers,—and in executing their orders failures resulted, plaintiff is not responsible, unless the failures are attributable to his negligence, laches, dereliction, or fault in executing the orders given." The contract contained the customary provision that "where the bottom of the trench does not, in the opinion of the engineer, make a suitable foundation for the sewer, the trench shall be deepened and such founda-

tion under the sewer as the engineer will direct shall be placed therein." "There is not a single section in the contract," says the Judge, "or in the special and general specifications, that gives the plaintiff any discretion in executing the work. Throughout it is emphasized time and again that he is to do the work in strict accordance with the plans, the specifications, and the directions of the engineers, and those who represent them, to their entire satisfaction." "If the material used and the work were performed in accordance with the plans, specifications, and directions of the engineers, plaintiff is not responsible for failures, unless he is guilty of negligence or bad workmanship in doing the work as specified or as directed by the engineers." The city presented as experts in their behalf Rudolph Hering, of New York; J. L. Ludlow, Winston-Salem, N. C.; W. G. Kirkpatrick, City Engineer of Jackson, Miss.; Major B. M. Harrod, member of the Isthmian Canal Commission, and J. W. L. Stevens; all but the last being members of the American Society of Civil Engineers. The plaintiff was represented by Alexander Potter, of New York City, associate member of the same Society.

This case calls attention to the fact, which is too often overlooked by cities and others obtaining work by contract, that, as stated above, the contractor cannot be held responsible for the efficiency of plans which he himself had no hand in making or for the construction details which were ordered by others. This, however, does not mean that in no case can he be held for failures. If these



LARGE PIPE SEWER IN 16-FOOT TRENCH, NEW ORLEANS

can be shown to result from dishonest, careless, or ignorant failure to carry out the orders of the engineer or the terms of the specification, then he can undoubtedly be held responsible. Also, if certain results only are contracted for and the methods of obtaining them are left in the contractor's hands, then he can be held responsible for such results. Two alternatives, therefore, are open to the city: to leave the details entirely with the contractor and hold him responsible for results only, or to specify all details and assume the responsibility incurred thereby.

In the New Orleans case, if the contractor had been permitted to use his own discretion as to putting in foundations, his statements made in this trial would indicate that he would have used them along the sections which afterward settled; in other words, if his contract had called only for a completed structure, leaving to him the details of construction, he would have taken precautions to prevent such settlement. If his contract price had been figured to cover any such additional work which might be called for, it would undoubtedly have been greater, however. If he had been a conservative contractor, who did not need to run unnecessary risks in order to obtain work, the addition which he would have made to his bid to cover such contingencies would in all probability have been several times that which he actually had to spend therefor and the city would have been the loser. If, on the other hand, he had made too low an allowance for such contingent work, it would have been but human nature for him to have endeavored to make up such loss by slighting some other part of the work. We believe that the general experience has been that where a contractor is compelled to include in his bid a gamble on such uncertainties, the city is invariably the loser, whether he underbids or overbids; and the safest way is to so classify the work contracted for that the contractor can know beforehand exactly what he will receive for any work which he is called upon to do. The city must then, of course, have in its employ some one capable of directing the work as to secure the desired results. This does not necessarily mean that the City Engineer must be an expert along this particular line, but rather that if, at any time, a difficulty should develop in the work, expert advice should be obtained on this point, which may generally be done at a cost very much lower than that which would probably have been added to the bid of the contractor had he been made responsible for results. There are, of course, certain cases where the best plan is to place all responsibility for construction upon the contractor; this being specially desirable where the work is of a nature which has been made a specialty by certain contracting firms; such being subaqueous tunneling, the laying of pipes under water, the constructing of pumping or other machinery, etc. But in general, the City Engineer should be willing to make his own plans and direct the work with the courage of his convictions, and where such conviction is lacking, an expert should be employed to advise him. This would not necessarily cast a reflection upon the City Engineer, who must indeed be out of the ordinary if he can claim to be an expert in more than one or two branches. In fact, we believe that the best City En-

gineer is one who is blest with common sense in the carrying out of everyday construction work and designing, and who also has that highest element of common sense—the knowledge of his own limitations, and willingness to confess them.

Concrete Street Paving

THE city of Windsor, Ontario, Canada, has recently been laying concrete pavements on several streets, and the City Engineer, George S. Hanes, in an article in *Concrete*, states that they are giving entire satisfaction to the municipality and the public; that they are clean, smooth, sanitary and not so slippery and dangerous as some other pavements. The specifications for this paving were varied to fit the conditions of the different streets. In two of these the bottom layer was composed of 1:3:7 concrete; in one of the streets this was covered with a top layer of one cement, two sand and four screened river gravel from one-quarter inch to one inch diameter; in another a middle layer of 1:2:4 concrete was followed by a top layer of one cement and two of sand. The surfaces were floated with a wooden float and troweled. Expansion was allowed for by making cross joints one inch wide, filled with paving pitch, spaced from 40 to 80 feet apart. A more recent style of expansion joint used in the same city is to insert a strip of wood one-quarter of an inch wide and six inches deep crosswise of the pavement every fifteen feet, this being left in flush with the surface. The top layer is made two inches thick and the bottom layer four inches. The contract price for six-inch concrete paving was 99 cents a square yard, and the average cost for several years past of 12-inch macadam pavements with limestone base has been \$1.10 a yard. The writer states that he has seen a concrete city pavement which has been in use for twelve years and shows no signs of wear.

Advertising Municipal Work

MUNICIPAL JOURNAL AND ENGINEER,
Flatiron Building, New York.

Gentlemen—From investigation of the past records of public work, we are of the opinion that proposals for public work are not advertised in over 20 per cent. of the work let. The lack of this publicity causes little, if any, competition, and it permits a few local contractors to take work at high figures, and also permits illegal combinations between a few local contractors, resulting in the polling of bids at the city's expense. In our work in something over one hundred and thirty municipal plants, we have always adhered to the policy of advertising the work in some engineering and contracting paper. An investigation of Oklahoma and Indian Territory records shows twelve water works plants installed in the last year, none of which was advertised except in the home paper, the work going to a combination of two or three contractors, whose engineer withholds the publicity of the letting.

We are writing to suggest the advisability of a certain movement on the part of engineering and contracting papers to attempt to get legislation in the different States, compelling the advertisement of public work in engineering and contracting papers. This could especially well be taken up with the new State of Oklahoma, where laws will soon be made pertaining to public work. We believe, however, that similar legislation could be recommended and passed in other States with slight opposition, and perhaps no opposition, for representatives from the cities would realize at once that this would result in a saving to the cities.

Knowing that you are interested in this matter, we would be pleased to receive your ideas and any suggestion you may have along this line.

Very truly yours,

BURNS & McDONNELL.

Kansas City, Mo., October 23, 1907.

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

Roads and Pavements

BRIDGEPORT, CONN.—Decision has at last been reached to pave Fairfield Avenue with the blocks furnished by the Wyckoff Wood Preserving Company. These blocks were originally planned to be used, but when, after considerable delay, several carloads were delivered, Public Works Director Biltz refused to accept them because, it was alleged, they did not comply with the specifications. Arrangements were subsequently made with the American Wood Creosoting Company to supply its product at an increase in price of \$4,000, but when Mrs. Wyckoff later appeared before the committee and convinced the members of the excellence of her blocks and agreed to post a bond of \$10,000 to guarantee the pavement for five years against buckling or any other defect, the committee voted to rescind its former action in rejecting the Wyckoff block.

CHICAGO, ILL.—In a report made to Mayor Busse by Superintendent of Streets Michael Doherty, the statement is made that less than one-sixth of the streets of the city are fit for use in their present state, and that to remedy their condition will take millions of dollars in the next few years. The report sets forth that there are 4,100 miles of streets and alleys in the city, and of this total mileage only 644 miles can be said to be in good condition, and even these cannot be so considered after next year, for the ten-year guarantee under which they were built, and which obliges the pavement contractors to keep them in repair for that length of time, will then end. With the expiration of this contract, it is estimated that \$500,000 a year may be needed to keep the asphalt streets in repair, \$25,000 for the granite block, and \$100,000 for macadam pavement. Mr. Doherty adds it will be useless to attempt to repair any more cedar block, and it has developed that Wells Street, one of the principal thoroughfares on the North Side, may soon have to be closed, it being impossible to repair it because repairing was prevented by a court order obtained by the property owners.

ST. LOUIS, MO.—A list of questions most frequently asked by the Street Commissioners of other municipalities as to the general character of the work of the Street Department of this city has been compiled and is ready for distribution to those entitled to the information. The subjects cover the kinds of pavement used prior to 1901, which were Telford and granite—vitrified brick and granite, with asphalt, bitulithic and wood block being tried since that date; cost of the several pavements; regulations regarding the payment for street improvements, which show the city pays nothing for such work except along its own property, as any other property owner would be required to do, the balance being paid by the private property owners in the proportion of one-fourth by the property owner immediately adjoining and the other three-fourths by a special tax assessed against the property on the street back to the dividing line between it and the adjoining streets; a statement of the city's mileage of improved streets, showing amounts of the various kinds of paving and the methods of laying dust that have been used, closes the memoranda.

WASHINGTON, D. C.—The Commissioners have decided to try crude oil instead of water for sprinkling the country roads, as a means of preventing dust and mud, and insuring the life of the road. Upon the recommenda-

tion of Engineer Commissioner Jay J. Morrow and Assistant Engineer Commissioner Edward J. Markham, the District Property Clerk has been authorized to buy a carload of "Texas roadbed oil" for experimental purposes, and, if it proves successful, Congress will be asked to make a special appropriation to enable the officials to purchase it in quantity. As the oil must be thinned in order to distribute it on the road from the ordinary sprinkling cart, it is mixed with a solution of soap and water. As it will not be necessary to apply the oil to the roads oftener than three times a month, it is believed a great saving will be found over the present method of sprinkling with water daily.

Sewerage and Sanitation

CHICAGO, ILL.—Declaring that 90 per cent. of the milk sold in Chicago is impure or adulterated, the City Bacteriologist, J. F. Blehn, has advised the members of the Chicago Medical Society to work for the passage of a more stringent law to regulate its sale. He said the commonest evil in the milk traffic is "skimming" the cream from the tops of cans and bottles and injecting a coloring fluid to give the residue the color of pure milk. Another evil uncovered frequently by the inspectors of the Health Department is watered milk, which contains the germs of infantile cholera.

DES MOINES, IA.—Notice has been served on sixty different firms compelling the installation of smoke consumers and the elimination of the smoke nuisance. Under the new ordinance, the manufacturers had six months to comply with the terms of the new ordinance and the time limit will soon expire. Notice has been served upon all the worst offenders that the law would be strictly enforced and with the expiration of the time limit Chief of Police Jones will be called upon to put some of the smoke producers out of business. Fire Marshal Louis Siegel is the "official smoke eliminator," and he is now spending all his time in serving notices.

INDIANAPOLIS, IND.—Forced by threats of damage suits against the city to some immediate action, City Engineer Blaine H. Miller has recommended to the Board of Public Works the construction of a sewer to connect an open drain in the west part of the city with the Insane Hospital sewer, and this recommendation has been approved. The surface drainage from Washington Street is now drawn away in an open drain in the alley west of Harris Street, Mt. Jackson, and thence empties into an open ditch along the right-of-way of the St. Louis division of the Big Four railroad. The Big Four is now double-tracking this line, however, and has completely stopped up this drain with a new fill. The overflow has therefore gone to low property north of the Big Four, and has stood there in stagnant pools, menacing the health of the vicinity. The city will take immediate action.

PHOENIXVILLE, PA.—The Board of Health, through its physician, Dr. Henry H. Dancy, has asked the aid of the State and county authorities in stamping out typhoid fever. Dr. Samuel G. Dixon, State Health Commissioner, has detailed Dr. Scattergood to co-operate with the local Health Board. So many cases have occurred that they could not be accommodated at the hospital, most of them coming from the vicinity of the reservoir, into which is pumped the dirty water of the Schuylkill river, contaminated with the scum and rubbish of Royersford, Spring

City and other villages, and distributed to the Phoenixville people without being filtered. A number of deaths have occurred and Council has been urged to take action.

PORTLAND, ORE.—Harbormaster Speier, who has been unearthing pest spots along the water front which have existed for years, has called the attention of the health officers to what he considers a veritable plague-spot in the vicinity of the Ash Street dock, where debris of every description has been dumped by merchants and the company owning the dock, and the private sewage from many of the business houses empties upon the ground. The City Health Officer is endeavoring to force the merchants responsible for the condition to do their share of the work, in which case the company will do its share, and the city will clean away the trash which has accumulated in the street beneath the dock. If those who have created the nuisance do not take action soon, legal measures will be resorted to.

PROVIDENCE, R. I.—An ordinance has been passed prohibiting the turning of steam, gasoline, benzine, or other highly volatile or inflammable material, or any water above 130 degrees Fahrenheit into any common sewer, under penalty of a fine of \$20 and costs for the first offense and \$20 per day for every day the violation is continued.

Water Works

CARBONDALE, PA.—A resolution has been adopted instructing the Light, Fire and Water Committee of the Council to wait upon W. W. Scranton, President of the Consolidated Water Company, in an effort to secure a reduction of the family water rates of this city, from the present rate of \$8 to \$6 per annum, the amount at present paid in the city of Scranton, where the officials are seeking a further reduction and improvements in the service.

KALAMAZOO, MICH.—A number of new cases of typhoid fever have been reported and Mayor William Thompson has issued a proclamation as follows:

To the Citizens of Kalamazoo:

It becomes necessary to again call your attention to the boiling of the water you drink, whether from the city supply or from private wells. More or less resistance has developed to the action of the Health Department and the City Council in their efforts to purify conditions in the sanitary zone. This antagonism is unjust and uncalled for and no attention should be given to it. The actual existing facts are such that demand the immediate attention. See to it that your drinking water is boiled.

If a typhoid epidemic should occur, it would be because you have disregarded the warnings given.

The Health Department, the Council and city officials intend to enforce the city and State sanitary laws.

Every citizen living outside of the sanitary zone should lend aid in enforcing the laws. The water furnished by the city is delivered all over the city and the health of those who live farthest away is just as much in jeopardy as those in the immediate neighborhood of the "zone."

I do not wish to alarm any one, but the advice above is for the good of your family.

The water should be boiled.

After a conference between Mayor Thompson, Health Officer Levy and Superintendent of Schools Hartwell, it was decided to shut the water off from the public drinking fountains, and children attending the public schools will be furnished boiled water to drink.

NORFOLK, VA.—Following the recommendation of Mayor James G. Riddick, Common Council has concurred in the action of the Board of Aldermen in passing the ordinance providing 2,100 water meters for the city, which also carried an appropriation of \$50,000 of the city's four per cent. bonds. The vote on the meter ordinance was opposed by only three Councilmen, twenty being for it. Those opposing did so on the ground that half the sum would better demonstrate what the city could do with meters, and that with the five hundred meters the city has installed and one thousand more, the Water Department could very well determine whether the meter

plan would be a feasible one or not, but it was pointed out that meters have already proven their value and that 1,500 meters would be inadequate when it was considered that there are 11,000 service taps in the city.

PITTSBURG, PA.—The bonding of the city water mains so as to make them immune to the ravages of electrolysis, due to the wires of the Pittsburg Railways Company, is about complete, and is considered one of the greatest money-saving plans ever devised for the benefit of the taxpayers by the municipal authorities. Director of Public Works Shepherd says five thousand or six thousand dollars a year will be saved, as during the last ten years the eating away of the water pipes by the currents of electricity from the powerhouses, represents a loss of at least \$55,000, which represents only part of the cost, as entire systems of trunk main lines of the municipal Water Department have been utterly ruined. The preliminary "electrolytic survey" made by E. E. Brownell, B.E.E., of Chicago, Ill., who was employed by the Railways Company for the purpose, disclosed that 46 of the 62 miles of water pipes paralleled by the tracks of the street railway corporation were affected, the annual loss in iron from the pipes being 40 tons, or 80,000 pounds. A total flow of 4,040 amperes passed through or along these pipes, and in winter, when salt was used to melt the snow and ice on the tracks, the damage was greatly increased, in some instances the water pipe system being ruined after being down only three years. Sixteen streets have been torn up in the recent bonding work, and altogether more than eighteen miles of water pipe were found to be in very dangerous condition and liable to break at any moment, causing flood and vast loss to property, not to mention the added danger in case of fire.

ROCHESTER, N. Y.—City Engineer E. A. Fisher has arranged with Albert B. Herrick, Consulting Engineer, and expert in such work, for a complete electrolysis survey comprehending the properties of the Rochester Railway Company and the Rochester Railway and Light Company, which includes the water pipes of the city in both systems, gas pipes and cables in the conduits of the railway and light companies in connection with the tracks, and other methods for the return current. The plan has been approved by the Mayor. The city is to pay \$400 and the railway and lighting companies \$500 each. An effort will be made to find out the amount of damage to the city's water mains by return currents of electricity, and the best means of remedying existing conditions.

WASHINGTON, D. C.—W. A. McFarland, Superintendent of the Water Department, referring to the recent complaints from business men and residents in the central section of the city, about the low pressure, and, in some instances, scarcity of water, says the District is in no way responsible for the condition complained of as the War Department has supervision and absolute control of the Washington aqueduct and the filtration plant, the distribution only being under the District. The local Water Department is never notified of any changes in the water service contemplated by the War Department, and Mr. McFarland thinks if the control of the water supply and the water distribution were consolidated under the jurisdiction of one department, a much better service could be assured.

WILMINGTON, DEL.—This city is now supplied with filtered water for the first time in its history. The preliminary filters constructed by the Water Department, which have been subjected to a severe test, have demonstrated that they can take out from 60 to 75 per cent. of the pollution in the water. The Water Department has not yet decided to build the final filters. It is believed the purer supply of water will prevent the rapid spread typhoid fever has been making.

Street Lighting and Electric Power

CINCINNATI, O.—An ordinance has been prepared by the City Auditor for the inspection of gas meters, and to test and analyze the quality of gas furnished the city and other consumers. It provides for the appointment of a chemist and six inspectors. The consumer who desires his meter tested will be compelled to deposit one dollar, twenty-five cents of which is set apart as a fee for the examination, and the remainder is to be used to cover the cost of the labor incident to the installation of a new meter should the old one be found defective.

FARGO, N. D.—A gas meter inspection ordinance has been introduced in City Council, which among other things provides for an inspector to inspect the gas meters and ascertain the quality, purity and illuminating power of the gas. The inspector is to pass an examination as to qualifications before an examining board, consisting of the Professor of Chemistry and the Professor of Physics of the Agricultural College and the Principal of the Fargo High School. The fee for inspection is to be one dollar per meter. The City Attorney was requested to present to the Council a written opinion regarding the authority of the Council to enforce a gas meter inspection ordinance.

MARENGO, ILL.—The city has made arrangements for leasing its municipally-owned electric light plant to Fred E. Rispin, President of the Elgin (Ill.) Merchants' Light Company, and Earl Fish, who was formerly City Electrician of Elgin. According to this arrangement, the city leases the plant to these parties for a period of twenty years, agreeing to pay for all extensions of wires required for street lighting during that time. For the street lighting the city is to pay \$35 per year for each of 35 arc lamps, \$30 for the next 10, and \$20 for any additional ones. The company is to furnish the power for the lights at their own expense, operate the lights on a moonlight schedule, and make all repairs to the street lamps; also furnish current for private use at 12 cents per k.w.h. Extension of wires for private service is to be made at the expense of the company, which agrees to furnish current continuously at all times sufficient for all private users. Press reports state that private parties have, for several years, been endeavoring to purchase the plant; also that for the last two years, under municipal operation, it has been unprofitable, chiefly because the capacity of the plant has become inadequate for the services demanded.

PASADENA, CAL.—C. C. Glass, Manager of the Pasadena Municipal Lighting Plant, has shown in his report for September that the taxpayers of the orange grove suburb of Los Angeles were saved in one month alone \$974.97 by the operation of the city's plant over the cost as charged for public lighting by the Edison Company. The report shows that the plant was in operation on the commercial circuit 357 hours and a fraction over, the average being 11.53 hours. The arc lights were operated on the moonlight schedule and were burned 243 hours and 35 minutes. There are now in regular service, says the report, 302 arc lamps and 103 32-candle-power incandescent lamps for street lighting, with the City Hall, library, police station, city feed yard and two engine houses connected for incandescent lights, having a total installation equivalent to 316 candle-power lamps. The total power-house operating expense was \$636.58. The total operating expense outside of the power-house was \$338.03, making a total of \$974.61. Manager Glass figures the total cost of arc lights for the month at \$864.61, or \$2.80 per lamp, against \$3.80 per month paid by the city of San Jose under the contract entered into with the Edison Company five years ago.

Fire and Police

FORT WORTH, TEX.—Commissioner George Mulkey, in a recent address to the members of the Police Department, advised them to be careful in dress, language, and manner while on duty; to see that their uniforms are kept in good and neat condition; to refrain from swearing, and maintain a soldierly bearing; to patrol their beats as if they were in earnest and not as if they were tired. Officers were also warned against striking prisoners, being told that policemen have no authority to strike a man under arrest. With reference to drinking, Commissioner Mulkey declared that while he could not stop a man from drinking while off duty, he could secure men on the police force who would not drink, to take the place of those who persist in such practice. Members of the Department were also informed that they must not engage in other work, as the city needs their best efforts, and a man cannot work twenty-four hours a day; if an officer considers his pay as a policeman is insufficient, that he would do well to accept other more lucrative employment.

LOUISVILLE, KY.—Chief of Police Haager recently sent an order to every police captain in Louisville that any campaign pictures or literature found tacked up on the public highways within the city limits was to be torn down. The order further stated that in the future each patrolman would be held responsible for any of these pictures found on his beat. Instructions will be given to watch for anyone tacking them up and cause their arrest under the city ordinance, which makes the act a misdemeanor. Another order issued to the police by Chief Haager commanded them to keep a sharp lookout and cause the immediate arrest of anyone who builds a bonfire at a political meeting. This order will make one exception. Bonfires will be permitted on macadam streets, but on no others. It is applicable to fires other than those started at political meetings, and includes the burning of leaves and rubbish.

NEW YORK, N. Y.—An instructive comparison of the work of the Detective Bureau in 1890-92 with that of the past few years shows a greater number of arrests now, with a still greater percent. of convictions. The number of arrests alone is not considered as a good standard by which to gauge the value of the work of the bureau, but the number and percentage of convictions is. The Commissioner also notes an improvement in the system employed in keeping the rogues' gallery. The 15,000 photographs in the collection are now classified according to the nature of the crimes which the criminals are known to commit.

ST. LOUIS, MO.—Chief of Police Creecy has issued instructions to the Captains of each district to forward to headquarters a list of all the men who have not participated in target practice, as the Chief regards skill with the revolver an important qualification for a policeman, and intends to see that every man on the force can shoot straight. Over three hundred probationary patrolmen have been appointed in the last year, and very few of the men have fired their pistols. Practice will start at once.

ST. PAUL, MINN.—The Committee on Fire Prevention of the National Board of Underwriters, in a report on its inspection of St. Paul, sums up the conditions as follows: Water supply works ample and well designed; distribution system incomplete and supply available in many sections unsatisfactory; the supply in the congested value district good for ordinary conditions; the Fire Department is fairly efficient, but inadequate for the city; the fire alarm system is inadequate, and only fairly reliable. Taking into consideration the atmospheric conditions, the report draws the conclusion that the number of fires in the city and the average loss per capita is rather high, and the opinion of the Committee is expressed that the Department is underpaid and undermanned.

Government and Finance

NEW YORK, N. Y.—The report of the Chief Engineer to the Mayor and Board of Estimate and Apportionment, showing the estimated cost for each borough and total for all boroughs, of local improvements authorized by the Board of Estimate and Apportionment since January 1, 1907, is as follows:

		Estimated Cost.	
BOROUGH OF MANHATTAN.			
15 street improvements.....	\$161,000		
19 sewer improvements.....	162,500		
Total for Manhattan.....		\$323,500	
Total for Manhattan during 1906....			\$1,028,700
BOROUGH OF BROOKLYN.			
148 street improvements.....	\$1,310,300		
100 sewer improvements.....	792,700		
Total for Brooklyn.....		2,103,000	
Total for Brooklyn during 1906.....			2,633,150
BOROUGH OF THE BRONX.			
70 street improvements.....	\$2,226,000		
42 sewer improvements.....	1,127,700		
Total for the Bronx.....		3,353,700	
Total for the Bronx during 1906.....			3,754,600
BOROUGH OF QUEENS.			
27 street improvements.....	\$484,500		
25 sewer improvements.....	120,600		
Total for Queens.....		605,100	
Total for Queens during 1906.....			1,383,150
BOROUGH OF RICHMOND.			
16 street improvements.....	\$53,700		
14 sewer improvements.....	282,100		
Total for Richmond.....		355,800	
Total for Richmond during 1906....			1,000,300
476 Total for all boroughs since January 1, 1907.....			\$6,721,100
Total for all boroughs during the year 1906.....			\$9,799,900

ST. LOUIS, MO.—Clerk Thomas J. Leonard, of the House of Delegates, is preparing another bill for the purpose of creating a Public Utility Commission to investigate and report on the advisability of regulating public service rates. The bill is to be a compromise between the three introduced by different members of the House. None, however, is expected to pass, as City Comptroller Player must first certify to the appropriation to pay the expenses of the investigation, which he has already said he will not do. The new bill makes Mayor Wells Chairman and three Councilmen and three Delegates members of the Commission. A Secretary and Attorney are to be employed, and about \$10,000 will be necessary. Delegate Dwight F. Davis, who introduced a bill providing for salaried men on the Commission, argues that the work will never be done if city officials, who cannot hold two jobs on salary, constitute the Commission.

WASHINGTON, D. C.—The Commissioners will ask the next Congress to appropriate \$13,667,266.35 for the support of the local government, of which \$3,291,350 will be for extraordinary expenses in the form of urgent improvements; \$975,408 for the sinking fund and interest on the Shepherd bonded debt, and \$9,400,508 will be devoted to current expenses. The estimates are \$544,000 less than the estimates submitted by the heads of the various departments, and \$3,337,058 over the amount for the fiscal year ending June 30 next. Among some of the more important items included in the estimates will be a request for an appropriation for 100 additional members of the police force; \$10,000 with which to make a survey preparatory to asking for an appropriation to construct an additional conduit for the local water supply; \$100,000 for the erection of a municipal hospital for the treatment of chronic and convalescent patients; \$100,000

for the erection of an additional wing to the District workhouse for males; \$750,000 for the installation of high-pressure water service; \$355,350 for suburban and trunk sewers; \$150,000 for railroad plaza terminal work; \$40,000 for a public bathhouse, and \$1,936,000 for new school buildings and additions to present school buildings.

Refuse Collection and Disposal

NEW YORK, N. Y.—A mass meeting was recently held in the Educational Alliance Hall, when five thousand persons, including the Janitors' Society, were addressed by Commissioners Darlington, of the Health Department, and Bensel, of the Street Cleaning Department, their speeches being repeated in Yiddish. The Commissioners said that most of the abuses of health regulations came from tenants who did not use common sense, and they offered to aid and co-operate with the janitors at all times. Commissioner Bensel began to take an interest in the Janitors' Society at the time thirty-four of its members were fined \$1 each for allowing garbage to be mixed with ashes, and it is thought the meeting will tend to produce harmony of action between janitors and the Street Cleaning Department.

ORANGE, N. J.—At a conference between representatives of the Boards of Health of Orange, South Orange, West Orange, Glen Ridge, Montclair, and Bloomfield, three plans for the disposal of garbage were considered. The plan given the greater consideration called for the erection of a crematory, the maintenance of which would be provided for in assessments on each of the municipalities. Another plan suggested was the erection of a plant where the garbage would be reduced to an oil by a steam method. This oil would have a commercial value, and the proceeds from its sale could be used in helping to maintain the plant. The third plan called for the treatment of the refuse matter with a disinfectant. A Committee composed of Dr. A. C. Benedict, of South Orange; Dr. J. Minor Maghee, of West Orange, and Dr. Poor, of Orange, was appointed to learn which plan would be most acceptable.

SPOKANE, WASH.—As a result of the recent action of the Board of Public Works in increasing the price of the cremation of garbage from 25 cents a load, irrespective of weight, to \$1 a ton, the city crematory was boycotted by the City Scavengers. The Scavenger Company is reported to have purchased a tract of land north of the city limits, a long distance from any house, on which it has commenced to dump its garbage, and not a single load of garbage was taken to the crematory. The Board of Public Works insisted that the new scale was fair and voted to create a Crematory Department, to include garbage collection, street cleaning, and the incinerating plant, also to purchase an 80-ton Decarie crematory in place of the present one of 40 tons' capacity.

YOUNGSTOWN, O.—The party of city officials who recently visited Cleveland to inspect the garbage reduction plant there believe that this method of disposing of garbage is the only right one for Youngstown. In Cleveland, the cost of maintaining the plant is realized in the profits made on the by-products of the plant, so that the system is self-sustaining, and it will probably be recommended to City Council that a garbage disposal plant be built and that a contract be made for the collection of garbage. For this, bonds will have to be issued. There will have to be an issue for the plant and another one to pay next year's bills for the collection of garbage, as it is now too late to have a levy made for the purpose.

Parks and City Beauty

ATLANTA, GA.—Mayor W. R. Joyner, in an effort to beautify Atlanta, suggests that the city erect permanent electric arches at each end of Whitehall Street viaduct. He proposes to have them so arranged that a brilliant

semicircle of light can be flashed at the entrances of the viaduct by simply turning a button. The Mayor declares that on occasions of public celebrations it would be a simple matter to attach lettering of electric lights to these arches; that when conventions are held in the city, or on any other occasion when it is desirable to decorate, wording appropriate could be arranged on the arches and when the current was turned on the arches would be things of beauty and would attract the attention of everyone who came within range. It would be possible to use all white lights, or vari-colored lights—just as the occasion required. A feature of the plan is that, after the expense of construction is met, there will be no cost save when the lights are actually burning.

FORT WORTH, TEX.—Commissioner Davidson is ambitious to have Fort Worth become the most beautiful city in Texas. Parks will soon be established in the center of Broadway, curbed off from the paving, ready for trees and flowers; Pennsylvania Avenue is also mentioned for parking, and it is expected a number of wide streets will be selected for similar work. The Commissioner urges the residents to keep the streets and yards clean by seeing that no waste paper or refuse is thrown into the streets and the weeds are cut, as he says it is the well-kept premises, about even the smallest cottage, as well as the handsome houses, that make up the city beautiful. With the city looking after street paving, parking and drainage, and the people showing their pride in their homes, Commissioner Davidson hopes to have not only a "spotless town," but the most beautiful one in the State.

NEW ORLEANS, LA.—There was no bidder for the sale of the lease of West End Park for a period of twenty-five years. Mr. Foster, President of the Railway Company, said he had been committed to bid upon a fifty-year lease, but City Attorney Gilmore is opposed to a lease of that length, and thinks even twenty-five years too long a period. He says the city itself could operate West End as a pleasure resort for the people and give amusements, run trains, and operate along the lines proposed by the specifications, using what revenue was gained therefrom for the continued maintenance and embellishment of the park. He thought it would be better for the city to operate the park than have it practically given away.

PARIS, FRANCE.—A census recently taken of all the trees owned by the city shows a total of eighty-seven thousand, or one tree to every thirty-two inhabitants. These figures do not include the woods in the parks. Passy has the most trees, 10,500 to 35,000. The yards and thoroughfares of the Gobelins quarter, of tapestry fame, are next, with 7,340, and eight other districts are more favored than the Champs Elysées. One quarter is without one and another has only four.

Rapid Transit

CHICAGO, ILL.—The City Council License Committee has recommended the passage of the "taximeter ordinance," which provides that after May 1, 1908, all cabs, hacks, and other public conveyances for individual hire shall be equipped with taximeters placed in plain sight of the occupant, and showing the number of miles traveled, the amount of time used, and the charge the driver is entitled to make. These taximeters must be inspected by the Commissioner of Public Works every month. If one is found to register wrong, then the cab which carries it is to be put out of commission until the machine is put back in working order. If the ordinance is passed Chicago will be the first city in America to install them officially. Some of them are in operation in New York, but, like those in London, they were put in voluntarily by cab owners, who found that they increased their business in that cab hirers, knowing they were there, took these

cabs in preference to others, to be secure against overcharges. In Paris and Berlin, on the Continent, however, their use is universal, city regulations compelling them.

CINCINNATI, O.—The Committee on Trade Extension of the Business Men's Club of Cincinnati, has advised the authorities to grant electric railways entering the city convenient access to the business district, and provide a central terminal station, in order to enable them to land passengers near the principal stores and business houses. The report states that trade follows the lines of least resistance, and the best way to increase it, and get the best results from the interurban service, is to make the heart of the city accessible to the travelers on those railways.

INDIANAPOLIS, IND.—Mayor C. A. Bookwalter, in a recent letter, answering an inquiry in regard to the street railways of the city, says that while Indianapolis enjoys one of the best street car systems in the United States, and everyone is entitled to a seat, as a matter of fact it is like every other American city, and every passenger does not get a seat; that during the rush hours there are about as many people hanging on to straps as there are passengers enjoying seats. He says the American people are so constituted that even though a law existed that no passengers should be taken upon cars after all seats are occupied, it would be impossible to keep off the cars those would-be passengers whose haste would induce them to crowd into the car, even though compelled to stand up. On one of the lines, during the rush hours, Indianapolis has a service of practically three minutes, and still cars are jammed and crowded. It is the peculiarity of the American people that they all take the first car along, no matter how much discomfort it may be to them, even though by waiting five or ten minutes they would be enabled to enjoy a comfortable ride. In reply to a question as to how many the cars carry inside, Mr. Bookwalter says they carry just as many as can crowd in, and he thinks that any conductor who attempted to prevent a passenger from still further crowding would find himself in violent contact with the would-be passenger. He is also of the opinion that the ideal plan for street car operation would be for every passenger to have a seat, but that so long as American people continue to be in a chronic hurry, just so long it will be an impossibility to get every passenger a seat.

LEBANON, PA.—An ordinance is under consideration providing for the placing of air brakes and headlights on all street cars being operated in the city, with a penalty attached for any violation. The ordinance calls for the cars to be equipped with the latest improved Westinghouse air brakes, and also the latest headlights, the latter to be not less than 200 candle-power.

NEW YORK, N. Y.—The report of the Public Service Commissioners for the month of September shows that a person was killed every fifteen hours by the street, subway, or elevated cars in New York City, and that in twenty-six days of the month of August forty-two persons were killed, and the total of killed and injured was five thousand five hundred. Of those injured, 147 had fractured skulls, broken or amputated limbs, or other serious injuries. Of the dead or injured, 641 were employees. The others were passengers or pedestrians, or drivers or occupants of vehicles that crossed the street car's "right of way." The greatest number of "classified" accidents was suffered by passengers alighting from cars, or a total of 1,263. Four hundred and five pedestrians suffered from getting in the way of cars, an average of one every hour and twenty-nine minutes.

The Public Service Commission will make a favorable report on building a new subway, the route of which is known as the "tri-borough" line. As mapped out by the old Rapid Transit Commission, it runs from the Bronx

under Third Avenue across Manhattan Bridge to Brooklyn, and thence under Flatbush and Fourth Avenues to Coney Island. The Commission has already decided to build the Brooklyn part of the route and will soon announce its determination to go ahead with the construction of the Manhattan part as originally laid out. The cost of the section of this side of the East River would be from \$35,000,000 to \$40,000,000. In the event of failing to get satisfactory offers from contractors for the building of the subway, the Commission will have the subway built by the city.

WASHINGTON, D. C.—The Commissioners at the next session of Congress will present a bill in which they will renew their efforts to secure legislation giving them supervisory control of street railway schedules and transfers, and other street railway questions, which would give them authority to regulate and govern the operation of local companies. Commissioner H. B. F. Macfarland, President of the Board, says municipal regulation of street railway operation is now admitted to be desirable as an alternative to municipal ownership of such public utilities. In principle it is embodied in existing legislation, which is rendered ineffective by lack of suitable penalties. If necessary, a provision might be incorporated in the bill authorizing the Commissioners to secure expert advice, either by temporary employment of disinterested street railway experts, theoretical and practical, or by means of a permanent commission of expert advisers. The main thing is to make effective, by well-considered legislation, the present ineffective municipal regulation of these public service corporations.

PARIS, FRANCE.—A novel proposal is occupying the attention of a special commission of the Paris Municipal Council, in the form of a scheme to construct a series of moving platforms which are to form a circle in the center of Paris underneath the grand boulevards and the Boulevard St. Germain. It is proposed to have three running roadways, moving at different speeds. Passengers would step off the fixed pavement to the slow-rolling platform, and from that to the faster ones in turn. A trial has proved that getting on and off the platforms is as easy as boarding an omnibus.

Miscellaneous

BALTIMORE, MD.—A notable event of Baltimore's Old Home Week was the parade of the municipal officials and employees, all the departments being represented, including police, fire, paving and repair, street cleaning, sewer-building, lighting and subway, health, letter-carriers, water works, building, etc. The floats were the educational feature of the parade, among the most prominent of which were City Engineer Fendall's Department, which contained three floats, one showing the new Stoney Run bridge at Merryman's Lane, the reproduction being one-sixth of the size of the original. The practical display of the Sewerage Commission had a "life-size" section of the immense concrete outfall sewer, through which all the sewage of the city will eventually flow to the disposal plant at Back River; it represented a sewer so large that two men walking around inside of it had as much space as they would in the room of an ordinary house; the Health Department floats showed a foreign ship being examined at Quarantine, and method of inspecting milk at the railroad station; while the Park Board on three floats gave an outline of the new idea in park management by showing respectively a park playground, park picnic, and park gymnasium.

NASHVILLE, TENN.—City Council, by a vote of 23 to 0, passed an ordinance over the veto of Mayor Morris, increasing the pay of city laborers from \$1.75 to \$2 per day.

NEW YORK, N. Y.—Conferences have recently been held between members of the Jamaica Bay Improvement

Commission and representatives of the United States Government, concerning plans for proposed Government surveys to be made preparatory to the conversion of what is now a waste of swamp land in Jamaica Bay into a great seaport. The plans proposed by the Commission provide for filling in and bulkheading six large blocks in the bay, which, with the improvement of adjacent city property, would add nearly 5,000 acres in that section for commercial and manufacturing purposes. The purchase of 9,000 acres of adjoining marsh land for the same purpose is also under consideration. The construction of a 7,500-foot stone jetty at Rockaway Point, bulkheading part of Barren Island, widening a creek back of Bergen Beach, extension of Flatbush Avenue to Barren Island, construction of a causeway across Jamaica Bay, and provision for about one hundred and sixty miles of piers, are among the contemplated improvements, estimated cost of completion of which is about \$30,000,000.

PITTSBURG, PA.—The Soho Public Baths Building, the cornerstone of which has recently been laid, is regarded by managers and superintendents from other institutions who have studied its plans, as the best of its kind in the United States. The building will cost \$100,000, and will contain as part of its equipment forty showers and four tubs, waiting rooms for men and for women, large assembly hall and gymnasium; in the basement will be two needle baths, twelve showers, two tubs for children, a public washroom, where the women of the neighborhood may take their clothes to wash and dry, a barber shop, a private laundry for laundering towels, and a boiler room; the swimming pool, dressing rooms, and lockers are located in the sub-basement. A feature of the front of the building will be a drinking fountain for the people, while near to the pavement will be provision for quenching the thirst of small animals. It is intended to interest the children in the project and by their contributions purchase the fountain, which is regarded as one of the most humane features of the new institution.

WASHINGTON, D. C.—The annual report of W. C. Haskell, Sealer of Weights and Measures, recently submitted to the Commissioners, shows 21,261 inspections, and the total amount of receipts collected \$24,677. The greatest source of revenue is the rentals for the stands in the three markets owned by the District, which amounted to \$10,206. Sealer Haskell says that one of his most difficult tasks was to get certain grocers to keep their scales in balance, instead of having the scales start on the one or two-ounce mark, and many and various ingenious devices were resorted to for the purpose of pulling the scales down to their advantage. A number of grocers were prosecuted.

In reviewing the work of the public bathing beach, Superintendent W. X. Stevens states that between the opening day, August 19, and September 15, when it was closed, the beach was used by 7,241 persons. The report states:

These ponds (bathing pools) are located at the south side of the White Lot between the Seventeenth street driveway and the Washington monument. The grounds are laid out with little fountain pools, a network of winding walks through shrubbery and other shade trees, a romantic island within the large lakes, and flowers everywhere. Five ponds, covering eight and a half acres, are offered to the beach. One pond 100 feet wide and 700 feet long rests in the bed of the old canal, the towpath of which is now a neat walk bordered by grassy terraces under a line of beautiful shade trees bordering Seventeenth street. Here is a deep swimming course of a quarter-mile straight stretch directly in front of sitting room for thousands of spectators, and over the heads of these hundreds more of spectators may view the aquatic sports from automobiles and other carriages. Another pond of four and a half acres may be adapted as a public playground for bathers; another not so deep is suitable for women and children; yet another one some deeper is suitable for men learning to swim, and all are to be bordered that none can accidentally wade into deep water.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Municipal Interest

MUNICIPAL BONDS NOT TAXABLE

Penick, Tax Collector, vs. Foster.—The general rule is that public property and the various instrumentalities of government are not subject to taxation. This immunity rests upon the most fundamental principles of government, being necessary in order that the functions of government be not unduly impeded, and that the government be not forced into the inconsistency of taxing itself in order to raise money to pay over to itself. Constitutions and statutes, in so far as they deal with the subject of taxation, are to be interpreted in the light of the fundamental principles above referred to. The municipality is a mere political division of state. It is a public corporation, having for its object the administration of a portion of the powers of government delegated to it for that purpose. A municipal corporation may borrow money to be used for the purposes of government, or for such other purposes as may be authorized by the Constitution and laws, when the power to borrow is delegated in the charter. Bonds issued by a municipal corporation as evidence of a loan made to it are instrumentalities of the government which creates the municipal corporation. Laws providing for the collection of taxes will not be so construed as to authorize the collection of a tax upon such instrumentalities of government, unless there is in the law clear language declaring that such was the intent of the lawmaking power. General terms and expressions in the Constitution, or in the statutes providing for the collection of taxes, are never allowed their full literal import, the effect of such construction is to require that to be done which the law does not authorize, or to violate a fundamental principle upon which the government is founded and operated. The word "property," in that clause of the Constitution of this State which declares "All taxation shall be uniform upon the same class of subjects and ad valorem on all property subject to be taxed within the territorial limits of the authority levying the tax," properly construed, does not require the taxing of public property or any of the lawful instrumentalities of government. There is not, in the tax law of this State, any terms which expressly declare that the bonds of the State, or its various political subdivisions, are subject to tax, nor any language in such laws which clearly indicates that it was the intention of the General Assembly to subject these instrumentalities of government to taxation, either by the State or any county thereof. Bonds issued by a municipal corporation of this State in the hands of a resident of the State are not taxable by this State or any county thereof.—Supreme Court of Georgia.

SEWER DISTRICTS

Silva vs. City of Newport et. al.—Act of April 16, 1890, authorizing the division of a city into sewer districts and the issuance of bonds for sewers therein paid by a tax on each district, is not repealed by the Revised Statutes of 1903, forming a part of the charter of cities of the class to which the city belongs, and providing for the payment of sewers by owners of abutting property. The power of a city to establish sewer districts and construct sewers therein at the cost of each district, as authorized by the Act of April 16, 1890, is not exhausted by the establishment of districts and the partial construction of sewers in a district as provided for by a plan for sewers therein; but the city may subsequently complete the system as originally established, but has no power thereafter to add additional streets or sewers. A city established sewer districts and made an estimate and a map of a sewer system for a district. The estimate and map were lost. Held, that parol testimony was admissible to show what the original plan was so as to authorize the city to carry the same into effect.—Court of Appeals of Kentucky.

RIGHTS TO WATER UNDER PUBLIC STREET

Hamby et al. vs. City of Dawson Springs et al.—An owner of land who opened a street and acquiesced in the act of the Legislature establishing a town owns the soil of the street subject to public easement to use the street for municipal purposes, and he may enjoin the town from putting down a well in the street to strike the vein of mineral water supplying a well on his land, not for the purpose of obtaining water merely, but to supply the mineral water free to all, the attempt of the town being an attempt to take the owner's property for public use, without compensation, and a judgment for damages affording inadequate relief.—Court of Appeals of Kentucky.

WAINWRIGHT PATENTS FOR PROTECTED CURB

Steel Protected Concrete Co. et al. vs. Central Improvement & Contracting Co.—The Wainwright patents, Nos. 428,432, 614,587 and 727,233, all for improvements in the construction of concrete curbing, are void as to the metal corner bar shown therein for protecting the upper and outer corner of the curb, which is mentioned in the first, and shown in the drawings, and forms the subject-matter of the two later patents; the general idea of such a protecting bar having been shown in a patent granted to Coignet in 1869, and none of the Wainwright patents disclosing any patentable improvements thereon. Quære, whether a defendant sued for infringement of a patent who asserts the validity of a junior patent which is clearly a copy of complainants' is not estopped to deny the validity of the latter.—United States Circuit Court, E. D. Louisiana.

LIABILITY FOR COST OF BRIDGE

Town of New Windsor vs. City of Newburgh.—In the year 1863, before the incorporation of the City of Newburgh, a law was passed by the State Legislature providing that the Town of New Windsor, the Town of Newburgh and the Town of Cornwall be responsible for the maintenance of the toll-bridge over Moodna Creek in the Town of New Windsor, which was established early in the last century. In 1865, when the City of Newburgh was created, the Town of Newburgh was released by legislative action from liability to keep this bridge in repair. In 1898 an act was passed by the State Legislature entirely releasing the City of Newburgh and the Town of Cornwall from all responsibility and expense of maintaining the bridge. In the spring of 1903 or 1904 the Moodna Bridge was swept away by a freshet. The bridge was replaced at considerable expense, and the Town of New Windsor claimed that, notwithstanding the act of 1898, the City of Newburgh was liable for a share of this expense. The plaintiff claimed that the effect of the Act of 1863 was to create a copartnership or community of interests between the three towns for the purpose of taking and holding the franchise owned by the Bridge Company, and that the franchise thus became property belonging to the towns jointly and that as an incident thereto each town as one of said owners had a vested right in the obligation of the other owners to contribute to the expense of maintenance. The court held that the express provisions of the act of 1863 and the established policy of the law would compel the courts to construe the purpose of the act as one intended to terminate the corporate life of the Bridge Company and destroy its franchise. If the towns were to succeed to the rights of the company as a partnership, they would presumably have the right to collect tolls. But this right was expressly denied. The moment the limited proprietary right of the Bridge Company was extinguished, it became to all intents and purposes a public highway of the State. The provisions as to raising a fund for the purpose of maintaining or constructing a bridge as a portion of a highway is in furtherance of the taxing power of the Legislature and is a legitimate exercise thereof. It is within the power of the Legislature to change the district subject to taxation, and the Act of Legislature in imposing the whole of this tax upon the town of New Windsor was a lawful exercise of such power.—Supreme Court of New York.

INJURY TO SERVANT OF MUNICIPALITY

City of Henderson vs. Smith.—A defect in a petition, in an action for injuries to an employee, due to the failure to allege that he did not know the danger incident to the work in the way it was done, is cured by the verdict, where the question was without objection submitted on proof received without objection. In an action by an employee for injuries received while aiding in setting electric light poles, evidence held to support a finding of negligence due to a failure to use cant hooks to prevent the pole from turning over while being raised. A verdict in a personal injury action, which is not so flagrantly excessive as to indicate that it was influenced by passion and prejudice, will not be disturbed.—Court of Appeals of Kentucky.

CHANGE OF GRADE OF STREET—DAMAGES

City of Owensboro vs. Yewell.—In an action against a city for damages for lowering the grade of a street adjoining plaintiff's property, it is not error to refuse permission to file an amended answer setting up at length the nature of the improvement; it being evidence which could be shown without being pleaded. In an action against a city for lowering the grade of a street adjoining plaintiff's property, the city cannot recover on a counterclaim for benefits, even if the property is rendered more valuable.—Court of Appeals of Kentucky.

NEWS OF THE SOCIETIES

Municipal Engineers Society of the City of New York.—The Society met in the Engineering Building, 29 West Thirty-ninth Street, on the evening of October 23, and discussed the advisability of asking the Charter Revision Committee to co-ordinate the Engineering Departments of the various city departments. The advantages of a separate Department of Engineering, or a City Engineer, or a Board of Engineers, were put forward by M. N. Baker.

Manufacturers' Association of New York.—At the regular monthly meeting of the Association at its rooms, 198 Montague street, Brooklyn, N. Y., October 21, the question of municipal ownership was the subject under discussion. Henry A. Powell, speaking in favor of public ownership, said that the problem should be approached not from the point of politics, but of economics. As such it was no new problem, as some utilities had always been owned and operated by the public. Regarding most of these, private ownership would not be seriously considered. Public ownership of some utilities had met with varying success in different localities. Extension of public functions had probably met with more than usual success in Switzerland, New Zealand and Glasgow, Scotland. However, a mere list of places where successes and failures had been met, set down in columns and balanced like a problem in bookkeeping would hardly give a correct answer to the question under discussion. The underlying question is: Is our citizenship sufficiently intelligent to elect office holders to whom may be committed the management of public utilities? The speaker was of the opinion that all that was necessary was to put the responsibility on the voters and, if it was heavy enough, their indifference in matters of local government would disappear and they would successfully demonstrate their ability to manage public enterprises. Arthur Hastings Grant said that a careful analysis of the results of municipal ownership did not indicate any improvement over the evils of private management. Most of the glowing reports of the cost of publicly operated utilities, when analyzed, are found to be incorrect and to omit important details of cost, such as general expenses of management. Not infrequently even the cost of supplies and operation is worked off onto other departments of government so as to conceal a loss. The speaker mentioned the high capital account of municipal plants as resulting from carrying on the books the cost of articles that had been worn out. He did not see how citizens who are careless of their city's welfare now would be more careful if municipal ownership should greatly enlarge the limits of the city's business.

National Municipal League.—The following is the program for the coming meeting to be held at Providence, R. I., in connection with the American Civic Association:

Tuesday afternoon, November 19, 3 p. m. President Bonaparte in the chair. Address of welcome by President Faunce, Brown University. Replies by President Bonaparte, of the National Municipal League, and President McFarland, of the American Civic Association. Greetings of the Canadian Union of Municipalities. "American Municipal Progress" (or "Battling for Betterment"). Review by Clinton Rogers Woodruff, Philadelphia, Secretary of the National Municipal League. "National Parties in Local Elections." Hon. Brand Whitlock, Mayor of Toledo, Ohio.

Tuesday evening, 9 p. m. Smoker for the men. Informal meeting for the ladies.

Wednesday morning, November 20, 10 a. m. President Bonaparte in the chair. Annual election of officers. Report of George Burnham, Jr., Treasurer, and committees. Report of committees. Report of Committee on Municipal Taxation. Local Taxation.—The General Property Tax, Nelson W. Evans; Home Rule in Taxation, Solomon Wolff, member Louisiana Special Tax Commission; Mortgage Taxation in Cities, Carl C. Plehn; Taxation of Credits in Cities, J. H. Easterday, Tax Commissioner, Washington; Taxation of Public Service Corporations, Hon. Oscar Leser and Allen Ripley Foote; Taxation of Manufacturing Capital; Taxation of Real Estate, F. A. Derthick, Master, Ohio State Grange; The General Property Tax in Cities, Delos F. Wilcox; Substitutes for Personal Property Tax in Local Taxation: with special reference to Canadian changes, Prof. C. E. Merriam; Taxation of State and Municipal Bonds, Arthur B. Chapin, Treasurer of Massachusetts; Paper received. Taxation of Banks of Deposit and Trust Companies in Cities, Frank M. Eastman; Taxation of Savings Banks in Cities, Charles E. Sprague; Paper received. Effective Taxation, Frederick N. Judson; Paper received. The Divorce of State and Local Taxation, Prof. E. R. A. Seligman; Inheritance Taxation; Taxation of Insurance Other Than Life, George F. Seward; Taxation of Life Insurance, E. L. Heydecker; Taxation of Railroads, Henry T. Newcomb and Frederick C. Howe; Taxation of Business Corporations; Special Assessments for Local Improvements, Arthur C. Pleydell.

Wednesday afternoon, 3 p. m. Round table conference on "Electoral Reform." Thomas Raeburn White, Philadelphia, presiding. Speakers, Robert Treat Paine, Jr., Boston; Hon. Robert Luce, Somerville, Mass.; Richard L. Gay, Boston; Percy N. Booth, Louisville; F. A. Simons, Albany correspondent, New York "Evening Post." Round Table Conference on "Is It Desirable or Practicable to Diminish or Exclude the Influence of National Parties and Issues in Municipal Contests?" Charles Richardson, presiding. Speakers: Hon. William M. Ivins, New York; Hon. Merwin K. Hart, Utica; Philip Loring Allen, New York; Walter L. Fisher, Chicago; Hon. D. L. D. Granger, Providence; Hon. J. Hampton Moore, Philadelphia; John Martin, New York.

Wednesday evening, 8:30 p. m. Annual address by Hon. Charles J. Bonaparte, President of the National Municipal League, on "Government by Public Opinion."

Thursday morning, November 21. Joint session with the association. "Forces Molding the City of the Future." Speakers: George E. Kessler, Miss M. Carey Thomas, Dr. Albert Shaw, President A. V. V. Raymond.

Thursday afternoon, 3 p. m. "The Galveston Plan of Government." President Bonaparte, presiding. Dr. W. B. Munro, of Harvard University, principal paper. "The Des Moines Plan." S. B. Allen. "The Newport Plan." Admiral Chadwick. "How Chicago Is Winning Good Government." George C. Sikes. "How San Francisco Is Winning Good Government." Fairfax H. Wheelan.

Thursday evening, 7 p. m. Dinner. Presidents Bonaparte and McFarland, Governors Guild and Higgins, President Faunce and Secretary Woodruff, speakers.

Friday morning, November 22, 10 a. m. Joint session with the association. "Municipal Health and Sanitation." Rochester, N. Y., Dr. George W. Goler, Health Officer; Montclair, N. J., M. N. Baker, President, Board of Health; Philadelphia, Pa., Dr. Alexander C. Abbott, Chief of Bureau of Health; Providence, R. I., Dr. Charles V. Chapin, Superintendent of Health; Columbus, Ohio, Dr. C. O. Probst, Secretary, Ohio State Board of Health. "Municipal Sanitation in Its Relation to State and National Government." Washington, Dr. William C. Woodward, Health Officer; New York, Dr. John J. Cronin, Department of Health.

American Civic Association.—The following is the program for the coming meeting to be held at Providence, R. I., in connection with the National Municipal League:

Tuesday, November 19, 3 p. m.—Open session. Address of welcome by President Faunce, replies by President Bonaparte and President McFarland; Round Table conference, "Definite Work for Small Communities." F. A. Whiting presiding, John Nolen and William Dulles speakers.

Tuesday evening, 8 o'clock, Niagara evening. Robert C. Ogden, presiding officer—"The Work of the McKim Commission Appointed by Secretary Taft." Frederick Law Olmstead, Jr., Brookline, Mass.; "The Work of the Power Development Companies." Gen. Francis V. Greene, Vice-President, Ontario Company, representatives of Niagara Development Company and Niagara Falls Hy-

draulic Power and Manufacturing Company, speakers; "The Work of the Commission," Charles M. Dow, Jamestown, N. Y., President of Commissioners of the State Reservation at Niagara, and Hon. John W. Langmuir, Toronto, President of Queen Victoria Niagara Falls Park, speakers; "The Work of the American Civic Association," J. Horace McFarland, Harrisburg, President.

Wednesday morning, November 20, 10 o'clock—Round Table conference on "Municipal Adornment." John Quincy Adams, presiding officer, speakers, Joseph T. Richards on "The Railroad as a Factor in Civic Improvement," and Frederick S. Lamb on "The Work of a Municipal Art Society"; Round Table conference on "Parks and Public Reservations." Henry A. Barker, Providence, presiding, speakers, John C. Olmstead, George A. Parker, A. W. Crawford and W. B. de las Casas; Round Table conference on "Billboards." Harlan P. Kelsey, Salem, Mass., presiding, speakers, Rev. S. G. Wood, E. T. Hartsman, R. W. Gilder, Norman Hapgood and Henry Lewis Johnson.

Wednesday afternoon, 3 o'clock—General meeting. President McFarland in the chair. "The Civic Opportunity of the Young Men's Christian Association." Robert Watchorn; "The Appalachian Reservation." Miss Mira Lloyd Dock; "The Smoke Nuisance." John S. Stevens; "The Drag Log and Good Roads." D. Ward King.

Wednesday evening, 9:30 o'clock—Reception to delegates.

Thursday morning, November 21, 10 o'clock—Joint session with National Municipal League, "Forces Molding the City of the Future," speakers, George E. Kessler, President A. V. V. Raymond, Miss Caroline Hazard, President W. H. P. Faunce, Walter H. Page, Dr. Samuel M. Lindsay.

Thursday afternoon, 2:30 o'clock—Round Table conference on "Work Among Children." J. Horace McFarland presiding; speakers, Miss Mabel Hill, Joseph Lee, Dr. Felix Adler, Miss Mary Marshall Butler, Rev. William Byron Forbush, Edwin D. Mead, Charles S. DeForest.

Thursday evening, 7 o'clock—Joint dinner to delegates.

Friday morning, November 22, 9:30—Annual meeting for reports of Secretary, Treasurer, committees, and election of officers.

Joint session with National Municipal League. Program as stated in program of National Municipal League.

Sanitary Officers of New York State.

—The seventh annual conference, which met in Buffalo October 17-18, was pronounced by State Health Commissioner Eugene H. Porter as the most successful that has ever been held. The question of milk supply was one of the most important topics discussed, and was summed up by Dr. Thomas Darlington, Health Commissioner of New York City, who stated that "the problem for a pure milk supply for a city is solved when the Department of Health can guarantee that all milk sold within the city limits is drawn from perfectly healthy and normal cows, housed in comfortable and sanitary quarters, handled by clean and healthy persons, quickly transported and delivered to the consumer in a sealed package."

Volunteer Firemen of New York, Connecticut, New Jersey and Pennsylvania.

—About four thousand volunteer firemen joined in a parade at Port Chester, N. Y., October 23. About one thousand musicians supplied the necessary sound for such an occasion, while the color was furnished by the uniforms and badges of the firemen—few of the volunteers having less than eleven. The firemen were from New Rochelle, Newburgh, Rahway, New Haven, Waterbury, Tarrytown, Ansonia, South Norwalk and other New York, Connecticut and New Jersey towns. It was a jubilee built on the order of those so popular in the olden time with firemen.

Volunteer Firemen's Association of Eastern Pennsylvania.

—The volunteer firemen from various points in South-eastern Pennsylvania opened a three days' convention October 22, the object being to effect a permanent organization to represent the volunteer fire compa-

nies in that section of the State. Eighty delegates, representing Berks, Bucks, Chester, Delaware and Lehigh counties, responded to the opening roll call. The convention was called to order by Edward McCarey, Chief of the Chester Fire Department. Rev. John Priest, pastor of the Providence Avenue Methodist Church, offered the invocation. Chief McCarey was named as temporary Chairman and R. John Shoemaker as temporary Secretary. The opening address was made by Mayor S. R. Crothers and the response by Dr. D. W. Jefferis, former Mayor of Chester, who accepted the golden key presented by Mayor Crothers on behalf of the city. The following officers were elected: President, Edward McCarey; Secretary, R. John Shoemaker; Treasurer, Philip McMunigal, all of this city; Vice-Presidents, David Voorhees, of Bucks County; Herbert P. Worth, of Chester County; Romanus Arnold, Sr., of Lebanon County; Max Silberman, of Montgomery County; James A. Ildham, of Northampton County; James H. Sweeney, of Delaware County. The Vice-Presidents were appointed a committee to draft a constitution and by-laws. After considerable discussion it was decided to name the organization "The Volunteer Firemen's Association of Eastern Pennsylvania," the western boundary line to be the Susquehanna River.

New Jersey Health Officers.—More than one hundred health officers of New Jersey gathered, October 20, in the Assembly Chamber at the State House, at Trenton, for the second annual conference of State and local Boards of Health. The conference was opened by a short address by Dr. C. F. Brackett, of Princeton, President of the State Board of Health. After the formal opening, Dr. Charles V. Chapin, Superintendent of Health, of Providence, R. I., discussed "Justifiable Measures for the Prevention of the Spread of Infectious Diseases." Other speakers were Dr. A. C. Abbott, Chief of the Bureau of Health, of Philadelphia; Chief State Inspector of Foods George W. McGuire; D. C. Bowen, Asbury Park; L. R. Thurlow, Plainfield; Dr. R. B. Fitz-Randolph, of Trenton; Josiah Stryker, Trenton; Judge William M. Lanning, Trenton, and Dr. W. H. Park, New York.

Calendar of Meetings

- November 6.**
American Society of Civil Engineers.—Regular semi-monthly meeting at the house of the Society, 220 West Fifty-seventh street, New York City.—Charles Warren Hunt, Secretary.
- November 12.**
National Tax Association.—Conference, Columbus, O.
- November 17-19.**
National Municipal League.—Annual convention, Providence, R. I. (in conjunction with the American Civic Association).—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.
- November 19-21.**
Canadian Clay Products Manufacturers.—Fifth annual convention, Ottawa, Canada.
- November 25-27.**
National Drainage Association.—Annual congress, Johns Hopkins University, Baltimore, Md.—A. G. Bernard, Chairman. Executive Committee, 1420 New York avenue, Washington, D. C.
- December 26.**
International Sanitary Convention of American Republics.—Third international meeting, Mexico City.—Surgeon General Walter Wyman, Chairman International Sanitary Bureau, Public Health and Marine Hospital Service, Washington, D. C.
- January 22-23.**
Iowa Brick and Tile Association.—Twenty-seventh annual convention, Des Moines, Iowa.

PERSONALS

ASHDOWN, JAMES H., Mayor of Winnipeg, Man., Can., has returned to this country after a trip to England in connection with floating a bond issue, and is convinced that conditions are not ripe for a satisfactory sale, and that it is better to wait until the spring when he expects there will be an easing of the money market.

BYRNE, H. H., Chief of Police of La Crosse, Wis., for fourteen years, died recently, aged fifty-five years.

COGGEY, JOHN V., Commissioner of Charities of New York City, was recently married to Miss May E. Coles, an employee of the executive office of the Board of Education.

DOZIER, D. W., Chief Engineer and Superintendent of Power Stations of the Twin City Rapid Transit Company, with headquarters at St. Paul, Minn., for five years, has resigned, and will retire from street railway work, after a score or more years' service, on account of failing health, to spend his time on his fruit farm in the Ozark Mountains, near Springfield, Mo.; he will be succeeded by George Caywood, now with the Allis-Chalmers Company in Milwaukee, Wis.

DUNBAR, WILLIAM M., Mayor of Augusta, Ga., recently made a trip to Louisville, Ky., on personal business, during which time the reins of government were in the hands of Councilman J. T. Bothwell.

DUNLAP, F. C., Chief of the Bureau of Filtration of Philadelphia, Pa., has been made Chief of the Bureau of Water, formed by a consolidation of the two bureaus.

ELFORD, MAJ. JOSEPH MARSH, City Clerk of Spartanburg, S. C., for fifty years, died at his home recently, aged eighty-five years.

GAUS, CHARLES H., Mayor of Albany, N. Y., has appointed a commission to investigate the cost of the city acquiring property along the dock front, to consist of Geo. D. Babbitt, recommended by the Chamber of Commerce; S. C. Wooster, by the Pine Hills Association; John F. Montignani, by the Civic League; Charles M. Stuart, by the South End Board of Trade, and Edgar C. Leonard, James T. Wasson and Frank C. Herrick.

GILCHRIST, A. R., City Engineer of Montgomery, Ala., and William H. Taylor, Chief of Police, have been reappointed by Mayor W. M. Teague and confirmed, and the new Council has also elected the following officers: Gaston Gunter, President of the Council; C. L. Ruth, Vice-President; John J. Farley, City Clerk; William J. Conniff, City Treasurer; George Powell, City Sexton; Gaston Greil, City Physician; E. F. Baber, City Recorder, and C. P. McIntyre, City Attorney.

GRAY, SAMUEL M., Providence, R. I., M. Am. Soc. C. E., and formerly City Engineer, has been appointed one of the appraisers of the water plant at Denver, Col., it being the intention of the city to purchase it from private parties.

GREGORY, CHARLES P., Deputy City Clerk of Pasadena, Cal., has resigned, and W. C. Yale has been named as his successor by Mayor Earley and confirmed by Council.

HAWLEY, W. S., Spokane, Wash., has been elected President of the Playground Commission recently appointed by Mayor C. Herbert Moore; Fred H. Gaston, Secretary, and Paul Priest, Treasurer.

HOFFMAN, F. G., City Engineer of Marion, Ill., and R. E. Townsend, formerly of the Engineering Corps of the Mexican Central Railway Company, have entered into partnership, with offices at Marion, and

will carry on a general engineering and contracting business.

INGERSOLL, COLIN M., Chief Engineer of the Bridge Department of New York City, is visiting London, Paris and other European cities studying foreign paving methods, and says the heavy automobile has evolved a new problem so difficult for municipalities to solve that an International Congress is to be called to deal with the subject.

KING, DR. JAMES A., Mayor of Manistee, Mich., invited a number of friends to dinner recently and surprised them with a wedding, the bride being Miss Minnie Billington, of Cadillac; after the repast the couple left for a trip to Milwaukee, Wis., from where they went to Chicago, Ill., by auto and thence to Portland, Ore., San Francisco, Cal., and a tour of the West.

LEA, J. O., City Treasurer of Charleston, S. C., for many years, has again been re-elected unanimously by Council, after words of commendation by Mayor R. G. Rhett and Alderman O'Neil, and the Revised Ordinances amended by unanimous consent increasing the salary from \$2,500 to \$2,700 per annum.

MCCALLA, S. L., Engineer of the Oliver Company, and W. H. Burk, a railroad engineer, have been engaged by the Special Paving Committee of Knoxville, Tenn., as paving experts to examine the sheet asphalt paving and submit separate reports on the work that has been done in the city; W. A. Park has already submitted a report on the subject.

MACFARLAND, H. B. F., President of the Board of Commissioners of the District of Columbia, with his colleagues, H. L. West and Maj. Jay J. Morrow, while engaged in the preparation of the annual estimates to be submitted to Congress for the next fiscal year, personally visited every section of the city, their tours of inspection taking them over one hundred miles.

PRATT, N. S., Councilman of Spokane, Wash., recently made a trip to Minneapolis, Minn., to study the garbage handling business, as the Pacific Coast city contemplates enlarging its department.

SCANTLEBERRY, WILLIAM, an expert machinist-engineer, has been appointed by the Commissioners of the District of Columbia a special inspector of machinery in the Engineering Department of the District; he will be detailed for duty at the Anacostia Bridge, which is under course of construction.

SISSON, W. W., Binghamton, N. Y., has been elected to the Board of Water Commissioners of the city, vice B. S. Curran, deceased.

VAN ORNUM, S. J., City Engineer of Pasadena, Cal., has had his salary fixed at \$182 per month, the Deputy City Engineer at \$135, draughtsmen and instrument men at not more than \$117, and chainmen at not more than \$65.

WAKEFIELD, GEORGE R., Lieutenant of Police, New York City, who will have charge of the police dogs attached to the police force, served as a gendarme of Belgium and carried a sword, in Ghent, while studying the system abroad.

WARD, WILLIAM W., Mayor of Fairmont, Minn., recently reelected, and member of the firm of Ward & McQuiggan, plumbers, of St. Paul and Fairmont, disappeared September 30 last, and relatives and friends are anxious to hear of him.

WRINN, JAMES, Chief of Police of New Haven, Conn., for ten years, and for forty years a member of the Department, has been retired, and Capt. Cowles, who was appointed patrolman April 26, 1878, has been made head of the Department.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Buildings, Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Street Improvements				
Missouri	Kansas City	October 31, 11 A.M.	Grading 14 sts; art. struc. curb; portions 9 sts.	E. A. Harper, City Engineer.
Arkansas	Argenta	October 31, 11 A.M.	Constructing extension to sidewalks at Fort Logan H. Roots.	Quartermaster Fort L. H. Roots.
Iowa	Des Moines	October 31, 11 A.M.	Paving 3,280 sq. yds. W. Walnut St. with asphalt.	W. W. Wise, Bd. Pub. Wks.
Ohio	Cincinnati	November 1, noon	Improving Hamilton pike from Mt. Healthy to Butler Co. line.	Fred Dreihls, County Clerk.
Pennsylvania	North Braddock	November 1, 3 P.M.	Brick paving, 2,100 sq. yds.; curb, 1,800 ft.; exc. 625 yds. Cliff St.	C. A. Stewart, Boro Engineer.
Ohio	Zanesville	November 1	Labor and material for improving alley bet. Elm and Center Sts.	P. S. Kerwin, Sec'y Bd. Pub. Serv.
Indiana	Fort Wayne	November 2, 10 A.M.	Constructing 16,340 ft. macadam road in Madison twp.	George W. Lindemuth, Co. Auditor.
Ohio	Monelova	November 2, noon	Grading, draining, macadamizing 1/2 mile country road.	Don C. Whitehead, Twp. Clk.
Indiana	Kokomo	November 2, 2 P.M.	Constructing 12 gravel roads, aggregating 40 miles.	Wm. B. Benson, Co. Auditor.
Indiana	Greencastle	November 2	Constructing 16,340 ft. gravel road in Russell twp.; improving 10,560 ft. macadam road in Monroe township.	C. C. Hunt, County Auditor.
Washington	Seattle	November 2	Grading, curbing, concrete sidewalks on various streets.	C. B. Bagley, Sec'y Bd. Pub. Wks.
Indiana	Decatur	November 4, 10 A.M.	Constructing macadam roads in Root and Kirklin twps.	C. D. Lewton, County Auditor.
Indiana	Logansport	November 4, 10 A.M.	Constructing 2 gravel roads, 4 miles long; also 2 others.	George W. Cann, County Auditor.
Indiana	Columbus	November 4, 10 A.M.	Constructing 4,761 ft. gravel road, Columbus twp.	John Davis, County Auditor.
Indiana	Indianapolis	November 4, 10 A.M.	Constructing Elzey Macadam Road in Root Township.	C. D. Lewton, County Auditor.
Ohio	Lakewood	November 4, 11 A.M.	Paving Newman Avenue.	B. M. Cook, Village Clerk.
Indiana	Sullivan	November 4, noon	Constructing 9,000 ft. stone road, Hamilton twp.	E. E. Russell, County Auditor.
Pennsylvania	Williamsport	November 4, noon	Grading West Third St. extension from Rose to Elm St.	James F. Fisher, City Engineer.
Indiana	Peru	November 4, noon	Establishing, grading, draining, paving 2 1/2 miles of free gravel roads in Richland township.	Charles Griswold, County Auditor.
Indiana	Jasper	November 4, 1 P.M.	Grading, draining, paving with stone, 4,235 ft. road, Patatia twp.	M. A. Sweeney, Co. Auditor.
Ohio	Sandusky	November 4, 1 P.M.	Stoning 6,305 ft. of Venice road, requiring 1,734 tons.	Charles Kubach, Co. Auditor.
Indiana	Salem	Nov'ber 4, 1:30 P.M.	Constructing 7 gravel roads in Monroe, Pierce and Jackson townships, 20 1/2 miles long; cost, \$46,307.	Sam G. Ellis, County Auditor
Wisconsin	Fond du Lac	November 4, 2 P.M.	Granitoid alley paving.	L. A. Pettibone, City Eng.
New Jersey	Red Bank	November 4, 6 P.M.	Paving portions of Front and Broad Sts.	George D. Cooper, Engineer.
Indiana	Hope	November 4	Constructing mile of gravel in Columbus township.	W. O. Clark, Chm. Co. Com'rs.
Indiana	Crawfordsville	November 5, 10 A.M.	Constructing, etc., gravel road in Union township.	B. F. Carmin, County Auditor.
Indiana	Vincennes	November 5, 2 P.M.	Constructing 104,602 ft. gravel road, Decker twp.; 10,268 ft. Vinc.	John T. Scott, Co. Auditor
Indiana	Paoli	November 5, 2 P.M.	Constructing 1,483 ft. gravel or macadam road, French Lick twp.	A. B. Ham, County Auditor.
Indiana	Brookville	November 5, 2 P.M.	Constructing 4,000 ft. of gravel road.	Chas. A. Miller, County Auditor.
Iowa	Davenport	November 5	Improving certain streets, according to plans, etc.	Thomas Murray, City Engineer.
Pennsylvania	Millvale	November 5	Paving and setting curb.	Borough Clerk.
Washington	Spokane	November 6, 11 A.M.	Concrete curbing for roads at Fort Wright.	Lt B. T. Scher, Q. M.
New York	Brooklyn	November 6, 11 A.M.	Regulating, repaving asphalt, 6 sts., 22,740 sq. yds.; wood blk., 4 sts.; 30,560 sq. yds.; also curb gutters, etc., several streets.	Bird S. Coler, Boro President.
Ohio	Akron	November 6	Brick paving, cement walks, Forge St.; also improving other sts.	J. W. Payne, City Engineer.
Ohio	Cleveland	November 6	Completing Miles Avenue improvement.	A. B. Lea, County Engineer.
California	Redding	November 7, 10 A.M.	Clearing and building wagon road 204 miles long.	S. N. Witherow, Clk. Bd. Superv.
Iowa	Des Moines	November 7, 11 A.M.	Bldg. reinforced concrete culvert, 30th and North St.	W. W. Wise, Bd. Pub. Wks.
Indiana	Rockville	November 7, 1 P.M.	Constructing macadam road between Parke & Fountain Cos.	H. A. Henderson, Co. Auditor.
New York	New York	November 7, 2 P.M.	Regulating, repaving, etc., on concrete; asphalt block, 7 sts.; asphalt, 15 sts.; granite block, 3; wood block, 1; curb, etc.	H. B. Thompson, Act. Boro Pres.
Indiana	Indianapolis	November 8	Performing certain road work.	Wm. L. Benson, County Auditor.
Wisconsin	Janesville	November 9, 2 P.M.	Laying combined cement curb and gutter, Chatham St.	S. B. Heddles, Chm. St. Com.
Ohio	Troy	November 12, 10 A.M.	Bldg. 2,800 lin. ft. macadam road, near W. Milton.	E. E. Pearson, County Auditor.
Pennsylvania	Harrisburg	November 12	Constructing 6,427 ft. macadam road, 16 ft. wide, Ashton twp.	State Highway Department.
Ohio	Cincinnati	November 15, noon	Paving Hog Back Road.	Fred. Dreihls, County Clerk.
Florida	Pensacola	November 15, noon	Constructing 107,700 sq. yds. clay or shale block, sheet asphalt, bitulithic, wood block or macadam pavement and 115,950 lin. ft. concrete curb.	T. Chalkley Hatton, Ch. Eng.
Iowa	Davenport	November 15	Paving several streets.	Thomas Murray, City Engineer.
Utah	Salt Lake City	December 6, 8 P.M.	Grading, paving and curbing First South St., inc. 60,000 cu. yds. grading, 17,000 lin. ft. curb, 41,000 sq. yds. asphalt.	Louis C. Kelsey, City Engineer.
Water Supply				
India	Rangoon	October 31	Pumping plant, in duplicate, capable of raising 10,000 gals. per minute, 220 ft. for the municipality.	Ogilvy, Gillanders & Co., 67 Sun Court, Cornhill, London E.C., Eng.
Maryland	Berlin	October 31	Franchise for water works, electric light and ice plant.	Orlando Harrison, Mayor.
Dist. of Col'bia	Washington	Nov'ber 4, 10:30 A.M.	Furn. water meters, etc., Circ. 396, 15th Canal Com'n.	H. F. Hodges, Gen. Pur. Agt.
Wisconsin	Milwaukee	November 4, 10:30 A.M.	Constructing, etc. (found. furn.) 3 return tubular boilers.	C. J. Poetsch, City Engineer.
Arizona	Tucson	November 4, 8 P.M.	Furn. material and constructing water works system.	Frank S. Treat, City Recorder.
Colorado	New Fort Lyon	Nov'ber 5, 10 A.M.	Installing water system at Naval Hospital, Schedule 385.	Navy Dept., Wash., D. C.
California	Oceanside	November 5, 7 P.M.	Furn. horizontal return tubular boiler 48-in. diam., 16 ft. long and cross-compound, high duty engine, 1,000 gals. capacity.	H. D. Brodie, City Clerk.
New Jersey	Bayonne	November 5, 8 P.M.	Labor and material for laying 1,310 ft. 8-in. 700 ft. 6-in. c. i. pipe.	W. C. Hamilton, City Clerk.
Oklahoma	Chillico	November 7, 2 P.M.	Improving water system at Chillico Indian School.	S. M. McCowan, Superintendent.
New York	Fort Terry	Nov'ber 11, 11:30 A.M.	Furnishing material and sinking 6-in. tubular well.	Capt. Wm. E. Horton, Q. M.
Minnesota	Piestone	November 12, 2 P.M.	Erecting tank, tower, etc., also buildings.	Willard S. Campbell, Superintendent.
Georgia	Atlanta	November 12	Furnishing 26-in. pipe to complete main to reservoir.	Park Woodward, Gen. Mgr. W. W.
North Dakota	Velva	November 12	Constructing water works system, including concrete reservoir, gravity pipe line and gasoline engine power.	S. M. Jones, City Auditor.
Wyoming	Fort MacKenzie	Nov'ber 14, 10 A.M.	Constructing 8-in. c. i. main from reservoir to fort system, etc.	Capt. Wm. D. Davis, Q. M.
Alabama	Fort Morgan	November 14, 2 P.M.	Building pump house, installing 2 horizontal tubular boilers 50 h.p.; 2 compound duplex pumps, ice plant, cold storage.	Capt. L. F. Garrard, Q. M.
Spain	Madrid	November 14	Supply of water meters 7 to 100 mm. caliber; atmospheres minimum pressure, any system.	Isabel II Canal Commission.
Manitoba	Winnipeg	November 15, noon	Supplying 15 miles of assorted water pipe.	H. N. Ruttan, City Engineer.
Minnesota	Sioux Rapids	November 15	Building \$25,000 water system.	City Clerk.
Georgia	Atlanta	November 25	Furnishing 20,000,000 and 25,000,000 gal. vertical or cen. pumps.	Park Woodward, Gen. Mgr. W. W.
Arizona	Phoenix	December 1, 3:30 P.M.	Labor and material for water works improvements.	Robert Craig, Superintendent.
Idaho	Shelley	December 1	Constructing water works, to cost \$6,500.	N. N. Holm, Engineer.
Georgia	Millen	December 1	Constructing water and electric light systems.	H. Q. Bell, Mayor.
New Jersey	Camden	December 17, 8 P.M.	Improving present artesian water supply system and adding to 17,000,000-gal. supply at least 5,000,000-gals. daily.	Jas. Potter, Chm. Water Com.
Sewerage				
Pennsylvania	Ardmore	October 31	Constructing 1,575 ft. terra cotta sewer in Lehigh Ave.	R. A. Warner, Supt. Health & Drain.
Iowa	Iowa City	November 1, 2 P.M.	Labor for 420 ft. 15-in. pipe, etc., combined sewer.	O. J. Slater, City Clerk.
Pennsylvania	North Braddock	November 1, 3 P.M.	Constructing 2 sewers, 1,151 ft. 15, 12 and 8-in. pipe, etc.	C. A. Stewart, Boro Engineer.
New Jersey	Riverside	November 1, 8 P.M.	Constructing sewerage system, inc. 10 miles 8 to 24-in. pipe, pump house, engine, pumps, well, disposal works.	Wm. H. Boardman, Town Engineer.
Washington	Seattle	November 2	Constructing sewer in Eleventh Avenue, West.	C. B. Bagley, Sec'y B. P. W.
Pennsylvania	Scranton	November 4, 10:30 A.M.	Constructing Sec. C, 10th Dist.; also sewer in Forest Court.	C. R. Acker, Dir. Dept. Pub. Wks.
Wisconsin	Milwaukee	Nov'ber 4, 10:30 A.M.	Constructing pipe sewers in West and South Sewerage Districts.	C. J. Poetsch, City Engineer.
Minnesota	St. Paul	November 4, 2 P.M.	Constructing three sewers.	R. L. Gorman, Clk. Bd. Pub. Wks.
Iowa	Ottumwa	November 4, 8 P.M.	Constructing several sewers, 6,000 ft. long.	John T. Brady, City Engineer.
California	San José	November 4	Concrete sewer 24 x 36-in., 9,932 ft. long; average cut, 13 1/2 ft.	C. H. Pieper, City Engineer.

Sewerage—Continued.

Minnesota.....	Two Harbors.....	November 4.....	Constructing sanitary lateral sewer, 2,560 ft. 7th Ave.....	City Clerk.
Iowa.....	Des Moines.....	November 4.....	Constructing brick culvert on 27th St. near Clark St.....	W. W. Wise, Bd. Pub. Works.
New York.....	Auburn.....	November 5, 8 P.M.....	Constructing vit. tile sewer in Beach Ave.....	J. S. Hanlon, City Clerk.
New Jersey.....	Trenton.....	November 5, 8 P.M.....	Constructing sewer in Hamilton Ave. and other streets.....	Harry B. Salter, City Clerk.
New Jersey.....	Bayonne.....	November 5, 8 P.M.....	Extension sewer, inc. 200 ft. iron or steel pipe, 40 yds. concrete.....	W. C. Hamilton, City Clerk.
Ohio.....	Girard.....	November 5.....	Constructing 5,600 ft. 18-in. pipe sewer; average cut, 15 ft.....	E. L. Hauser, Village Clerk.
Pennsylvania.....	Millvale.....	November 5.....	Constructing a sewer.....	Borough Clerk.
New York.....	Brooklyn.....	November 6, 11 A.M.....	Constructing 5 sewers, 6-24-in. pipe, etc.; estimate, \$13,436.15.....	Bird S. Coler, Boro. President.
Ohio.....	Akron.....	November 6.....	Constructing six 6-in. sanitary sewers.....	J. W. Payne, City Engineer.
New York.....	White Plains.....	November 7, 1:30 P.M.....	Constructing 7 sections, inc. 12 miles circular sewer, 34 to 6 ft. diam. and 3 miles circular-lined tunnel 64-84 ft. diam. of monolithic rein. concrete, block or brick masonry.....	Frank N. Glover, Sec'y B.V. Sew. Com.
Mississippi.....	Hattiesburg.....	November 7, 8 P.M.....	Constructing sanitary sewers, inc. 2,640 ft. 15-in., 2,090 ft. 12-in., 8,550 ft. 10-in., 15,150 ft. 8-in. pipe, 90 manholes, 7 flush tanks, 20 cu. yds. concrete masonry, 900 cu. yds. excavation, 140,000 ft. B. M. sheathing left in trench; 45,000 ft. B. M. foundation lumber.....	J. H. Putnam, City Engineer.
Ohio.....	Chagrin Falls.....	November 9, noon.....	Constructing sewerage system and disposal plant; cost, \$56,000.....	W. P. Rice, Eng. Co., Cleveland.
Florida.....	Pensacola.....	November 11, 3 P.M.....	Sewerage and plumbing at Santa Rosa Quarantine Station.....	James Knox Taylor, Wash., D. C.
Indiana.....	Aurora.....	November 11, 7 P.M.....	Constructing 6-20-in. vit. tile sewers, Dist. No. 1; cost, \$12,500.....	Frank D. Johnston, City Clerk.
Massachusetts.....	Boston.....	Nov'ber 15, 2:30 P.M.....	Constructing in rock and earth trench and tunnel Sec. 81 and parts Secs. 83, 85 Ext. High-Level Sewer, S. Met. System in Brookline and Brighton; five cost, \$15,000 security each; one, \$20,000.....	Wm. M. Brown, Ch. Eng. Sewerage Works, Met. Water & Sewerage Bd.
Michigan.....	Cadillac.....	December 2, noon.....	Building sewage purification works and pumping station.....	George Johnson, Clk. Bd. Pub. Wks.
New York.....	Auburn.....	December 3, 8 P.M.....	Construct'g Fourth, Fifth, Sixth, and Seventh Ward sewers and disposal plant, inc. 37, 150 ft. 8-20 in. pipe, etc.....	J. Walter Ackerman, City Eng.
Philippine Isds.....	Manila.....	January 19, noon.....	Twelve pumps and motors for new sewer system.....	J. F. Case, Chief Engineer.

Public Buildings

Illinois.....	Peoria.....	October 31, 10 A.M.....	Erecting 2 hospital bldgs., Ill. Gen. Hosp. for Insane.....	Geo. A. Zeller, Superintendent.
New York.....	New York.....	October 31, 10 A.M.....	Additions, alterations, steam-heating, 3 engine houses.....	F. J. Lantry, Fire Com'r.
Missouri.....	Kansas City.....	October 31, 11 A.M.....	Erecting bldgs., etc., Co. Home for Aged and Infirm; cost, \$250,000.....	Smith & Rea, Dwight Bldg., Archs.
Illinois.....	Chicago.....	October 31, 11 A.M.....	Building brick and stone police station, separate bids.....	John J. Hanberg, Com'r Pub. Wks.
New York.....	New York.....	October 31, noon.....	Material and labor for preparing for and building new ferry house, foot Whitehall St., Manhattan.....	J. A. Benschel, Com'r Docks.
Wisconsin.....	Milwaukee.....	October 31, 5 P.M.....	Erecting school building; also raising old one.....	F. M. Harbach, Sec'y Sch. Dir.
Missouri.....	Independence.....	October 31.....	Constructing 3 three-story buildings for Co. Home, cost \$225,000.....	Frank S. Rea, Kansas City Arch.
New York.....	Buffalo.....	November 1, 11 A.M.....	Erecting 20-room, also 18-room brick school building.....	F. G. Ward, Com'r Pub. Wks.
Wisconsin.....	St. Croix Falls.....	November 1, 2 P.M.....	Erecting one-story to jail building, lighting, plumbing, etc.....	F. D. Orff, Minnpls., Minn., Arch.
Connecticut.....	New Haven.....	November 1, 8 P.M.....	Erecting Assembly Hall; also public school building.....	Geo. T. Hewlett, Sec'y Bd. Educ.
New York.....	Stamford.....	November 1.....	Erecting 2-story 62 x 86 ft. cement, press brick and limestone school.....	E. W. Van Slyke, Binghamton, Arch.
Oklahoma.....	Mangum.....	November 1.....	Erecting County jail, to cost \$25,000.....	Floyd McJ. Neil, County Clerk.
Pennsylvania.....	Pittsburg.....	November 1.....	Erecting Allegheny Co. Soldiers' Mem. Bldg.; cost, \$850,000.....	J. G. Chalfant, County Engineer.
Louisiana.....	New Orleans.....	November 2, 11 A.M.....	Erecting dispensary building, etc., for naval station.....	Navy Department, Wash., D. C.
Dist. of Col'bia.....	Washington.....	November 2, noon.....	Erecting addition to McKinley Manual Training School.....	Jay J. Morrow, Eng. Com'r.
Kentucky.....	Louisville.....	November 2, noon.....	Constructing new engine house, Frankfort and Frank Aves.....	Thomas & Bohne, Keller Bldg., Arch.
New York.....	New York.....	November 4, 11 A.M.....	Erecting additions, heating, etc., 2 school buildings.....	C. B. J. Snyder, Supt. Sch. Bldgs.
Louisiana.....	Leesville.....	November 4, 12:30 P.M.....	Constructing, heating, wiring, etc., County Building.....	C. H. Oakes, Clk. Police Jury.
South Dakota.....	Pierre.....	November 4, 2 P.M.....	Erecting 2 bldgs.; additions and electric light plant.....	J. C. Levensgood, Supt. School.
Maine.....	Portland.....	November 5, 11 A.M.....	Erecting, heating, etc., double and single barracks.....	Capt. F. J. Morrow, Q. M., U. S. A.
California.....	Los Angeles.....	November 5, 2 P.M.....	Erecting 1-story morgue and 2 other frame buildings.....	C. G. Keyes, County Clerk.
Indiana.....	Bloomfield.....	November 5, 2 P.M.....	Erecting new jail cell house.....	J. W. Gaddis, Vincennes, Arch.
Michigan.....	Plint.....	November 5, 3 P.M.....	Constructing, complete, U. S. Post Office.....	James Knox Taylor, Wash., D. C.
Texas.....	Houston.....	November 5.....	Plans and specifications for \$500,000 fireproof Court House.....	Geo. F. Horton, County Engineer.
Alabama.....	Luverne.....	November 6, 10 A.M.....	Constructing fireproof jail.....	E. J. Ostling, Birmingham, Arch.
New York.....	Utica.....	November 7, 2 P.M.....	Wood and metal furniture for new Co. Court House.....	Edwin H. Risley, Chm. Com. City Clerk.
New York.....	Fulton.....	November 7.....	Installing steam heating plant for City Hall.....	Constructing Quartermaster.
Oregon.....	Fort Stevens.....	November 8, 2 P.M.....	Erecting, plumbing, heating, etc., barracks for 100 men.....	Garber & Woodward, Archs.
Ohio.....	Cincinnati.....	November 11, noon.....	Constructing school at Westwood, to cost \$150,000.....	Wm. J. Hardee, City Engineer.
Louisiana.....	New Orleans.....	November 11, 1 P.M.....	Erecting City Hall annex building.....	H. A. Stout, Bartlett Bldg., Arch.
New Jersey.....	Atlantic City.....	Nov'ber 11, 8:30 P.M.....	Erecting rein. concrete rest pavilion and comfort station.....	Willard S. Campbell, Superintendent.
Minnesota.....	Pipestone.....	November 12, 2 P.M.....	Constructing stone warehouse, hospitals, etc.....	A. P. Sawyer, President.
Washington.....	Seattle.....	Nov'ber 12, 3 P.M.....	Erecting Engineering, Chemistry, and Auditorium bldgs., State University.....	Board of Education.
New Jersey.....	Jersey City.....	November 14.....	Erecting annex to School No. 14.....	Capt. V. K. Hart, Q. M.
Wyoming.....	Cheyenne.....	Nov'ber 15, 10:30 A.M.....	Heating plant for new hospital, Fort D. A. Russel.....	James Knox Taylor, Wash., D. C.
Wisconsin.....	Chippewa Falls.....	November 15, 3 P.M.....	Constructing, complete, U. S. Post Office.....	Capt. Ernest R. Tilton, Q. M.
Virginia.....	Fort Monroe.....	November 20, noon.....	Twenty-five bathrooms, inc. construction, repairs, etc.....	Charles I. Williams, Architect.
Ohio.....	Dayton.....	November 21.....	Erecting 4-story, fireproof, steel and tile or rein. concrete manual training school 70 x 233 ft. press brick and stone or terra cotta trimmings; cost, \$120,000; equipment, \$30,000 more.....	James Knox Taylor, Wash., D. C.
Virginia.....	Portsmouth.....	November 22, 3 P.M.....	Constructing, complete, Federal Building.....	James Knox Taylor, Wash., D. C.
Texas.....	Tyler.....	November 25, 3 P.M.....	Constructing, complete, extension to Federal Building.....	James Knox Taylor, Wash., D. C.
Indiana.....	Marion.....	November 29, 3 P.M.....	Constructing, complete, U. S. Post Office.....	James Knox Taylor, Wash., D. C.
Missouri.....	Nevada.....	December 3, 3 P.M.....	Constructing complete, U. S. Post Office.....	James Knox Taylor, Wash., D. C.

Bridges

Alberta.....	Calgary.....	November 1, noon.....	Constructing steel bridge with concrete abutments.....	R. E. Speakman, City Engineer.
Manitoba.....	Winnipeg.....	November 1, noon.....	Erecting 2d-hand single-track, through-truss, steel r'way bridge, 155 to 165-ft. span.....	M. Peterson, Sec'y Bd. Control.
Pennsylvania.....	Indiana.....	November 1.....	Erecting 2 steel bridges, clear span, 30 feet.....	County Commissioners.
Indiana.....	Jasper.....	November 4, 11 A.M.....	Erecting two steel bridges; repairing Knoxville bridge.....	County Auditor.
Mississippi.....	Greenville.....	November 4, noon.....	Erecting a Ben bridge over Six Mile Bayou.....	T. H. Hood, Clk. Co. Superv.
Ohio.....	Ashland.....	November 4, noon.....	Labor and material for substructure bridge in Clear Creek twp; also steel superstructure and stone abutments; filling app'ches.....	E. B. Westover, County Auditor.
Kansas.....	Wichita.....	November 4, 5 P.M.....	Erecting concrete arch bridge, 50 ft. long, 50 ft. brick roadway; two 8-foot concrete walks.....	R. N. Dorr, City Clerk.
Kansas.....	Wichita.....	November 4.....	Erecting 4 steel bridges, 16 ft. wide, 70, 60, 40, and 30 ft. long; also 4 other structures 60 to 80 ft. long.....	County Commissioners.
Indiana.....	Angola.....	November 4.....	Constructing 20 x 14 ft. iron bridge.....	County Auditor.
Indiana.....	Crown Point.....	November 4.....	Erecting iron bridge; also wooden bridge.....	Charles A. Johnson, Co. Auditor.
Quebec.....	Laprairie.....	November 4.....	Constructing two ice piers in River St. Jacques.....	J. L. Millard, Res. Eng.
Wyoming.....	Sundance.....	November 5, noon.....	Erecting 2 steel bridges over Belle Fourche River.....	L. Nauch, County Clerk.
Indiana.....	Paoli.....	November 5.....	Erecting bridge in South East Township.....	Alvin B. Ham, County Auditor.
Indiana.....	Vincennes.....	November 5.....	Erecting 20 new bridges and repairing 4 old ones.....	J. S. Spiker, County Engineer.
Pennsylvania.....	Millvale.....	November 5.....	Constructing bridge over Girty Run.....	Borough Clerk.
Indiana.....	Muncie.....	November 6, 10 A.M.....	Erecting 2 bridges over Mississinona and 2 over White River.....	J. E. Davis, County Auditor.
Pennsylvania.....	Mauch Chunk.....	November 7.....	Erecting new eastern span on bridge over Lehigh River.....	D. O. Straup, Chm. Co. Com'rs.
California.....	Redding.....	November 8, 10 A.M.....	Erecting bridge over Sacramento River, near Castle Craig.....	S. N. Withrow, Clk. Bd. Superv.
Manitoba.....	Carman.....	November 8, noon.....	Erecting 90-ft. Pratt truss steel bridge, 18-ft. rdway, conc. abut. Reflooring suspension bridge over White River nr. Harrison.....	A. Malcolmson, Sec'y Treas., B. P. W.
Ohio.....	Cincinnati.....	November 8, noon.....	Erecting joint Co. bridge over Monongahela; 5 truss spans, 2 viaduct approaches, steel work 1,550 ft. long; roadway 25 ft. clear; one walk 6 ft. clear; plank floor, 2 electric car tracks; sub. of 2 river piers of stone, concrete foundations; 14 concrete pedestals, 2 concrete abutments.....	Fred Dreihls, County Clerk.
Pennsylvania.....	Washington.....	November 8, noon.....	Erecting joint Co. bridge over Monongahela; 5 truss spans, 2 viaduct approaches, steel work 1,550 ft. long; roadway 25 ft. clear; one walk 6 ft. clear; plank floor, 2 electric car tracks; sub. of 2 river piers of stone, concrete foundations; 14 concrete pedestals, 2 concrete abutments.....	Wm. Wylie, County Engineer.
Indiana.....	Richmond.....	November 9, 11 A.M.....	Constructing 2 bridges and 2 arches in 8 townships.....	County Commissioners.
Texas.....	Wharton.....	November 11, noon.....	Erecting steel highway bridge 32 ft. wide over San Bernard.....	G. S. Gordon, County Judge.
Ohio.....	Hamilton.....	Nov'ber 12, 10 A.M.....	Erecting concrete substructure bridge over Two-Mile Creek.....	Chr. Pabst, Co. Auditor.
Ohio.....	Troy.....	Nov'ber 12, 10 A.M.....	Erecting substructure for bridge and rein. concrete culvert.....	H. J. Walker, County Engineer.
Ohio.....	Cincinnati.....	November 15, noon.....	Repairing bridge over Miami River near New Baltimore.....	Fred Dreihls, County Clerk.
Montana.....	Glendive.....	November 15, 2 P.M.....	Constructing 34 steel bridges, Lower Yellowstone Project.....	U. S. Reclamation Service.
Oregon.....	Portland.....	November 15, 4 P.M.....	Erecting steel bridge in Union Ave.....	Douglas W. Taylor, City Engineer.
Sapin.....	Madrid.....	December 14.....	Erecting 14-meter wide bridge over Manzanares.....	Public Works Department.

Lighting and Electricity

Maryland.....	Berlin.....	October 31.....	Franchise for water works and electric light plant.....	Orlando Harrison, Mayor.
Iowa.....	Port Des Moines.....	November 1, 11 A.M.	Installing electric light fixtures, watt meter board, etc.....	John J. Boniface, Q. M.
Indiana.....	Seymour.....	November 1.....	Furnishing gas for light and fuel and electricity for light and power.....	Fred Everback, City Clerk.
Dist. of Col'bia.....	Washington.....	Nov'ber 4, 10:30 A.M.	Furn. electrical fixtures, belting, etc., Isth. Canal Com'n.....	H. F. Hodges, Gen. Pur. Agt.
Louisiana.....	Leesville.....	November 4, 12:30 P.M.	Electric wiring, etc., building for Police Jury.....	C. H. Page, Jr. & Bro., Austin, Tex., Architects.
South Dakota.....	Pierre.....	November 4, 2 P.M.	Erecting electric light plant, 3 bldgs., wiring, etc.....	J. C. Levensgood, Supt. Ind. Sch.
Michigan.....	Berrien Springs.....	November 4, 2 P.M.	Constructing electric light system; exclusive of power plant.....	Loren B. Marquissee, Village Clerk.
Maine.....	Portland.....	November 5, 11 A.M.	Electric wiring, fixtures, erecting, etc., two barracks buildings.....	Capt. F. J. Morrow, Q. M., U. S. A.
Indiana.....	Kokomo.....	November 8, 10 A.M.	Furnishing electric lights for streets and public buildings.....	W. T. Meck, City Clerk.
Colorado.....	New Fort Lyon.....	November 9, 11 A.M.	Erecting central power, light and heating plant, Naval Hospital.....	Navy Department, Washington, D.C.
California.....	Chico.....	November 12.....	Constructing electric light and heating plant.....	L. D. McMacay.
Ohio.....	Cincinnati.....	November 14.....	Furnishing material and installing light fixtures for Soldiers' and Sailors' Memorial Building.....	Sam'l Hannaford & Sons, Architects.
Dist. of Col'bia.....	Washington.....	November 14.....	Furn. fire alarm telegraph system, marine electric fixtures, batteries, etc., Isthmian Canal Commission.....	H. F. Hodges, Gen. Pur. Agent.
South Carolina.....	Charleston.....	November 15, noon..	Lighting sts. and public bldgs., 1, 2 or 4 yrs., inc. 500 arc. lights or equivalent in 5 ft. gas burners.....	Ion Simons, City Electrician.
Georgia.....	Millen.....	December 1.....	Constructing electric light and water systems.....	J. B. McCrary & Co., Atlanta, Eng.
Indian Terr'y.....	Red Fork.....	December 20.....	Constructing electric railway and power plant to serve Red Fork, Tulsa, W. Tulsa and Glen Pool; cost of plant, \$100,000.....	J. Robert Burnham, Tulsa, Engineer, Mid-continental Traction Co.
India.....	Calcutta.....	December 31.....	Lighting town by electricity, gas, oil, or other method; now lighted by 9,300 gas lamps of 24 c.p. and 2,400 c.p. oil lamps.....	Municipal Council

Miscellaneous

Georgia.....	Columbus.....	October 31.....	Furnishing 1,000 ft. cotton fabric rubber-lined fire hose.....	W. C. Lawrence, Chairman.
Ohio.....	St. Bernard.....	October 31.....	Reconstructing fire alarm system.....	Geo. Schroeder, City Clerk.
Georgia.....	Augusta.....	November 1, noon..	Rails, switches, ties, trolley wires and poles for 1,600 ft. spur track.....	Commanding Officer, Arsenal.
Alberta.....	Calgary.....	November 1, noon..	Constructing 12 miles st. car track and overhead trolley.....	R. E. Speakman, City Engineer.
Alberta.....	Calgary.....	November 1, noon..	Furnishing 6 semi-convertible cars with electric equipment.....	S. J. Clark, Chm. Bd. Pub. Wks.
Dist. of Col'bia.....	Washington.....	Nov'ber 4, 10:30 A.M.	Furn. oil tanks, lamps, bolts, hose, clamps, etc., Canal Com'n.....	H. F. Hodges, Gen. Pur. Agt., I.C.C.
Minnesota.....	Moorhead.....	November 4.....	Furnishing 1,000 ft. of fire hose.....	H. E. Roberts, City Clerk.
Pennsylvania.....	Millvale.....	November 5, 3 P.M.	Furnishing hook and ladder truck for Fire Dept.....	H. H. Dixon, Borough Clerk.
New York.....	Brooklyn.....	November 6, 11 A.M.	Dredging Newtown Creek; 14,500 cu. yds. scow measurement.....	Bird S. Coler, Borough President.
New York.....	New York.....	November 7, noon..	Furnishing 50 sets double truck harness, St. Cleaning Dept.....	W. Bense, Commissioner.
Dist. of Col'bia.....	Washington.....	November 8.....	Furn. Portland cement, boiler, feed pumps, etc., Isth. Canal Commission.....	H. F. Hodges, Gen. Pur. Agent.
Pennsylvania.....	Etna.....	November 11, 5 P.M.	Furnishing 500 ft. 2 1/2-in. cotton-lined fire hose, etc.....	A. R. Dunbar, Boro. Clerk.
Florida.....	Key West.....	November 12, 9 A.M.	Furnishing 125-h.p. boiler for barracks.....	Quartermaster.
Dist. of Col'bia.....	Washington.....	November 14.....	Furn. firemen's helmets, fire alarm system, hose, nozzles, fire harness, attachments, etc., Isthmian Canal Com.....	H. F. Hodges, Gen. Pur. Agent.
Pennsylvania.....	Altoona.....	November 15.....	Collection and disposal of garbage.....	Frank Engstrom, City Eng.
Oregon.....	Portland.....	November 18, 11 A.M.	Furnishing 4 hoisting engines, 3 locomotives, 2 boilers.....	Col. S. W. Roessler, U. S. Eng'rs.
Texas.....	Dallas.....	November 18.....	Building locks and dams 2 and 4 on Trinity River.....	Capt. W. P. Wooten, Eng. Corps.
South Carolina.....	Port Moultrie.....	Nov'ber 21, 11:30 A.M.	Constructing a wharf at Port Sumter.....	J. M. Fulton, Quartermaster.

STREET IMPROVEMENTS

Mobile, Ala.—The Board of Public Works has formulated the fifth paving venture; it is practically the same as the one rejected by the General Council, the only difference between the two plans being that in the new venture the paving of Warren street is omitted and Smith alley will be paved with vitrified brick, instead of creosoted wooden blocks. The scope of the new street paving project, which has yet to be advertised, and submitted to the General Council, embraces the pavement with creosoted wooden block of Government street from Ann street to Catherine street; Dauphin street, from Julia to Catherine streets; St. Joseph street, from State to Beauregard streets. With vitrified brick, Smith alley, Royal street, from Monroe to Canal streets, and Esclava, from Royal to Commercial. The paving of Warren street will be taken up later and made either the whole or a part of another paving venture. City Engineer Wright Smith's estimate for this work places the approximate cost for both wooden block and vitrified brick at \$2.30 per square yard. This is about 15 cents higher than the estimate for bituminous. The blocks will be from 5 to 9 inches long, 3 inches thick and 4 inches wide.

Selma, Ala.—Ordinances have been adopted providing for the paving of Water street, from the Louisville and Nashville passenger station to the Farmers' warehouse, seven blocks, and Broad street, from Water street to the alley alongside of the Arcadia Hotel, four blocks.

Washington, D. C.—In the annual estimates to Congress it is provided that \$27,900 be expended for paving five streets in the northwest section; \$77,100 for seven in the northeast; \$68,500 for five, southeast, and \$36,300 for five, southwest; also \$52,800 for the construction of six county roads, and \$258,000 for grading and improving streets in various sections.—Jay J. Morrow, Engineer, Commissioner.

Elgin, Ill.—Plans have been completed in the office of the City Engineer for improving North Liberty street, for paving and curbing; about 3,600 square yards of brick paving will be required.

Peoria, Ill.—An ordinance has been passed for issue of bonds for street paving purposes.

Des Moines, Ia.—Proposals will be received by the Board of Public Works for paving, curbing, grading, etc., certain portions of

Seventh street, according to plans and specifications.—W. W. Wise, Chairman.

Louisville, Ky.—Mayor Bingham and the Board of Public Works recommend the appropriation of an additional \$27,000 for street construction, which will probably be done. Ordinances have passed Council and been approved for constructing vitrified brick or block pavement, grading, curbing, etc., three alleys and one street; constructing brick and artificial stone sidewalks and constructing 18-inch vitrified pipe sewer in Gross avenue.—R. W. Bingham, Mayor.

Escanaba, Mich.—The proposition for issuing \$25,000 bonds for road improvements will be submitted to a vote of the people at the spring election.

Grand Rapids, Mich.—The approximate cost of grading and graveling, including curb, brick gutters, sidewalks and steps of Hall street from Granville avenue to Godfrey avenue, is \$12,465.—Samuel A. Freshney, Secretary and General Manager, Board of Public Works.

Greenwood, Miss.—The Board of Supervisors of Leflore County has ordered the issuance of \$60,000 bonds for erecting bridges and \$40,000 for building public roads.

Pascagoula, Miss.—Bids will be received, November 5, for the purchase of \$20,000 5 per cent. street improvement bonds.—W. N. Watkin, City Clerk.

St. Louis, Mo.—A bond issue of \$500,000 has been voted for the construction of King's Highway boulevard, across the west side of the city.

St. Joseph, Mo.—The Board of Public Works has instructed the City Engineer to prepare an ordinance for paving King's Hill avenue with brick on concrete foundation.

Ashtabula, O.—Engineer Amsden has filed plans for the Madison avenue extension and for the Pennsylvania avenue grading with the Board of Public Service.

Cincinnati, O.—At the November election the following street improvement bond issues will be submitted to a vote of the people: Spring Grove avenue and Colerain avenue, \$160,000; Eastern avenue and streets approaching thereto, \$275,000; West Sixth street, between Steiner avenue and Illinois avenue, \$55,000; West Sixth street, between C. C. & St. L. Railroad, Hannibal street, Pierson street, Freeman avenue and Carr street, \$110,000; total, \$600,000.—Edwin Henderson, City Clerk.

Proposals will be received by the Board

of Public Service for furnishing labor and material for paving certain streets.—M. J. Keefe, Clerk.

Mt. Vernon, O.—Council has enacted the preliminary legislation for paving Burgess street.

Norwalk, O.—Council will pave only a part of Woodlawn avenue at this time.

Norwood, O.—Bids will be received, November 14, for the purchase of \$3,829 Lawn avenue and \$4,457 Section avenue improvement bonds.—W. E. Wichger, Auditor, Room 712, Traction Building, Cincinnati, O.

Sandusky, O.—Proposals will be received by the Board of County Commissioners for improving Venice road, according to plans and specifications.—Chas. K. Kuback, County Auditor.

Struthers, O.—Bids will be received, November 2, for \$5,000 resurfacing bonds, 6 per cent. interest.—L. S. Creed, City Clerk.

Toledo, O.—Sealed proposals will be received by Township Clerk for draining, grading and macadamizing one-half mile of county road, according to plans and specifications.—Don C. Whitehead, Township Clerk.

Youngstown, O.—Bids will be received, November 14, for the purchase of \$4,500 street improvement bonds; \$25,000 Riverview sewer bonds; \$5,050 sidewalk bonds; interest 5 per cent.—William I. Davies, City Clerk.

Zanesville, O.—An ordinance has been passed to issue bonds for street improvements to the amount of \$81,000.—W. B. Beacon, Mayor.

Lawton, Okla.—The City Engineer has been directed to prepare plans and specifications for street pavements, estimated to cost \$90,000.

Harrisburg, Pa.—The Barber and the Warner-Quinnin Paving Companies, which have recently refused to bid on \$1.80 asphalt, did not put in bids for the paving of Zarker street, from Sixteenth to Seventeenth streets, and of Eighteenth street, from Market to Walnut streets, in which cases the maximum price was limited to \$1.80 a square yard. This is the second time Eighteenth street has been turned down. The maximum of \$1.80 for asphalt and 87 cents for curbing was the same as that at the former occasion, when no bids were received. The ordinance for Zarker and Eighteenth streets will probably be returned to Councils. The bids ignored carried with them 3,300 square yards of paving.

McKeesport, Pa.—Council is considering issue of \$200,000 bonds for the repaving of

Fifth avenue and Walnut street.—Thos. W. White, City Engineer.

Dallas, Tex.—A resolution has been adopted to pave Ross avenue. The city is to select the material, but bids will be asked on the following: Bitulithic pavement on concrete foundation, bitulithic on bituminous foundation, bituminous material on concrete base or bituminous base, rock asphalt; asphalt A, asphalt B, asphalt C, asphalt D, vitrified brick, combination concrete curb and gutter. The contractors will be required to give a maintenance bond of five years, but bidder must also make a bid for the work without such maintenance clause and a bid for an additional five years' maintenance.

Galveston, Tex.—The Galveston County Board has been authorized to issue \$500,000 bonds for proposed causeway.—Address Judge I. Lovenberg.

Salt Lake City, Utah.—The citizens on several streets are preparing to build sidewalks.—Address Clerk of the Board.

Wheeling, W. Va.—An election will be held to decide the question of issuing \$500,000 bonds for street improvements.

SEWERAGE

Forsyth, Ga.—The people have voted bonds of \$15,000 for installing a system of sewers.

Elkhart, Ind.—A remonstrance has been signed by the owners of every piece of property likely to be assessed for the proposed storm water sewer for Marion street, from Third to Eighth; the resolution of necessity will probably be rescinded.

Indianapolis, Ind.—The Board of Works has taken final action for local sewer in first alley west of Arsenal avenue, from Michigan street to point 10 feet north of Vermont street, and for local sewer in Washington boulevard, from Thirty-fourth to Thirty-sixth street.—Blaine H. Miller, City Engineer.

Terre Haute, Ind.—Council is arranging to expend \$9,000 in constructing sewers in Chestnut park.

Grand Rapids, Mich.—Estimated cost of constructing a sewer in Eleventh and Twelfth avenues, from Buchanan street to Michigan Central Railway, is \$2,850; and one in Veto street, from West Broadway to Straight street, \$630.

Menominee, Mich.—Drain Commissioner A. L. Sawyer is preparing preliminary surveys for the greatest drainage project ever undertaken in this country; the enterprise will be under the jurisdiction of the County Drain Commission.

Billings, Mont.—Council is arranging to construct sewers in certain streets, according to plans and specifications.

Roswell, N. M.—The matter of establishing a complete sewer system is under consideration.

Chagrin Falls, O.—Bids will be received by H. D. Bishop, Clerk of the Village, November 9, at 12 o'clock m., for a sewerage system and sewage purification plant; address the Walter P. Rice Engineering Company, 629 Society for Savings Building, Cleveland, O.; estimated cost, \$56,000; a certified check for \$2,000 required with each bid; bids received on October 14 were all rejected; W. J. Townsend Company, Cleveland, was low, at \$55,095.

Salem, O.—A resolution declaring it necessary to construct a disposal plant has passed Council; the improvement will be made a part of the sewerage system.

Springfield, O.—City Engineer W. H. Slevelling estimates that it will cost \$1,093 to construct a sewer in Grand avenue, between Center and Limestone streets, that will drain in the latter sewer. To relieve the situation in South Fountain avenue, where there is a 15-foot sewer, he recommends that a 15-inch relief sewer be laid in Euclid avenue, between Fountain avenue and Limestone street, which will cost \$626.50.

City Auditor L. M. Harris has disposed of \$68,000 worth of high level sewer bonds in various denominations to citizens.

Youngstown, O.—Proposals will be received by E. L. Hauser, City Clerk, for constructing sewers in several streets, according to plans and specifications. The Glenwood avenue sewer is to be completed to Cleveland street, under the old profiles.

Reading, Pa.—Mayor Gerber signed ordinances providing for the extension of the northeastern intercepting storm water sewer, from Eleventh and Greenwich streets, south on Eleventh street, to Buttonwood street, thence to Twelfth, to Walnut, where it will connect with the present sewer, and appropriating \$19,000 for the purpose; Providing for the construction of the Rose Valley creek sewer, to begin at Neversink and Culvert streets, thence south on Neversink street to Laurel street, west to Seventh, to South street, to the river; appropriating \$20,000 additional to the Board of Public Works, \$12,000 of which will be used in the Highway Department, and \$8,000 in the Sewer Department.

Aberdeen, S. D.—Proposals will be received at the office of the City Auditor for constructing sewer in several streets, according to plans and specifications.

Dallas, Tex.—Bids for sanitary and storm sewer work on Main street have been rejected; the city may do the work. The two bids on the storm sewer were C. W. Olcott, \$4,805.95, and the Dallas Home Improvement Company, \$4,584.17; and on the sanitary sewer the bids were C. W. Olcott, \$2,558.10, and the Dallas Home Improvement Company, \$2,560.50.

Pleasant Valley, W. Va.—An election will be held to decide the question of issuing \$6,000 sewer bonds.—Address City Clerk.

West Allis, Wis.—Council is arranging to establish two sewer plants.—Address City Clerk.

WATER SUPPLY

Eldorado, Ark.—The property owners of this place have petitioned for improved water works.—R. N. Garrett, Chairman.

Atlanta, Ga.—The City Water Board and Special Council Committee have decided to advertise for bids for pipe to finish laying new water main from Casey's hill to the reservoir; cast-iron pipe, riveted steel pipe, and reinforced cement pipe are wanted.—W. R. Joyner, Mayor.

Blue Ridge, Ga.—An election will be held, November 23, to vote on issue of \$14,000 water works bonds; \$8,000 electric light bonds, and \$8,000 sewer bonds; interest, 5 per cent.—Address City Clerk.

Lindsay, I. T.—The citizens have voted \$23,000 bonds for water works purposes.—Address City Clerk.

Murray, Ky.—An election will be held, November 5, to decide the question of issuing \$19,000 bonds for constructing water system.—Address City Clerk.

Bay City, Mich.—W. D. Youngs Company's new plant will be fully equipped with complete water system.

Ishpeming, Mich.—About 1,600 feet of the Lauder used to carry off the water pumped from the Lake Angelen basin is to be abandoned and a new section built; the present Lauder was built at a cost of \$20,000.

Sheboygan, Mich.—The City Clerk has been directed to advertise for bids for the purchase of \$360,000 bonds for buying water plant.—Address City Clerk.

Fremont, Neb.—Council has rejected all bids for water supply; new bids will be called for on the same specifications.

Rome, N. Y.—Specifications are being prepared for improvements in water system; the work includes intake tunnel and aqueduct.—Knight & Hopkins, Engineers.

Fargo, N. D.—Council has unanimously adopted resolution of Alderman Lewis for the appointment of a committee of seven to confer with officials of the city of Morehead and the Northern Pacific Railroad Company with the view of securing a more adequate and purer water supply for Fargo, and report to the Council in December.—S. F. Crabbe, City Engineer.

Akron, O.—Council has requested some very extensive improvements and extensions to the water works plant and to the Fire Department in the direction of extending water mains.

Delta, O.—Council will submit the question of a bond issue for the construction of a water works plant to the people at the forthcoming election; C. W. Hatten, Clerk, states that the Council has had no plans as yet prepared for this undertaking.

Salem, O.—Council has voted against the appraisal of the present water works, and it is likely that the franchise to E. G. Vermilion, of Cleveland, for a water works plant will be allowed.

Wauseon, O.—The town of Morenci will vote, November 1, on the proposition of selling \$95,000 bonds for constructing a water works plant and sanitary sewer system.

Zanesville, O.—Council has passed an ordinance to issue \$8,000 bonds for new water works system.

Mangum, Okla.—The city has voted bonds for water works extensions.—Address City Clerk.

Pittsburg, Pa.—Controller John B. Larkin has recommended to Mayor Guthrie the employment of a Consulting Engineer, to have charge of the beginning of operations at the Pittsburg filtration plant so that the work may be started on an economical basis.

The Allegheny Valley Water Company has decided to install complete water system throughout the city.

Lebanon, Tenn.—An election will be held, November 20, for the purpose of voting on \$10,000 bond issue for building water works.

Memphis, Tenn.—Chas. R. Miller & Co. will build a reinforced concrete reservoir with a capacity of 50,000; it will be built for the new auxiliary plant at Central and Tanglewood avenues, at a cost of \$8,000.—Address Clerk.

Crockett, Tex.—A proposition for issuing \$25,000 bonds for building a system of water works was carried.

Norfolk, Va.—Council has passed ordinance providing 2,100 meters for the city and carrying an appropriation of the city's 4 per cent. bonds; they must be procured as soon as possible.—H. Hodges, Chairman, Board of Control.

Spokane, Wash.—A resolution has been adopted authorizing the Board of Health to engage the services of a competent Sanitary Engineer to report as to the present condition of the water supply of the city, and its likelihood to fulfill the requirements of the city in the future.

LIGHTING AND ELECTRICITY

Montgomery, Ala.—The Montgomery Light & Water Power Company has been incorporated, with a capital stock of \$50,000; the company will improve gas plant, and make numerous extensions in their entire plant.—R. J. Chambers, General Manager.

Red Bluff, Cal.—The Northern California Power Company has just completed the purchase of 2,700 acres of land near Manton, known as the Hazen Place, and expects to add this as another unit to its great generating system, plant to be finished about July 1, and when completed to furnish about 5,000 horsepower.

Jackson, Fla.—The Jackson Light & Power Company has been organized, with \$16,000 capital stock, with the privilege of increasing to \$20,000; a dam will be constructed across Bassett's Creek, where a 35-foot head of water may be obtained with a short dam and about 600 horsepower obtained.—B. H. Warren, President.

Albany, Ga.—The Albany Power Company will receive bids for constructing a dam to develop power, and power house to be equipped with electrical machinery for generating and transmitting electricity at Porter Shoals, on Flint River.—Alex W. Smith, E. M. Y. Underwood, and a number of others, Incorporators.

Americus, Ga.—The recently organized Americus Railway and Light Company, capitalized at \$250,000, and composed of local and foreign capitalists, will begin shortly the new power plant, which will operate the electric street railway, supply lights, and pump the city's water under contract. The new company has already purchased the old gas and electric lighting plant in Americus, but will erect new buildings in another part of the city and install more modern and powerful machinery.

Madison, Ga.—The city has voted \$50,000 bonds for electric light purposes.—Address Mayor.

Oregon, Ill.—Paul F. Schuster has received franchise to establish a gas plant.

Rockford, Ill.—The Third National Bank is preparing to install a complete electric light system in certain portions of a new addition now being erected, for the purpose of furnishing light for the entire building.

Centerville, Ind.—The Board of Town Trustees has decided to install complete system of lighting.—Frank Nugent, President.

Burlington Junction, Mo.—The Burlington Junction Electric Light and Power Company has been incorporated, with a capital stock of \$6,000, by T. D. Garrett, Jesse F. Robinson, and a number of others.

Niagara Falls, N. Y.—A franchise was given by Council to the Niagara Falls Lighting System, and competition is assured; the city has been lighted by a company owned in large part by Chas. R. Huntley and George Urban, of Buffalo.—A. C. Douglass, Mayor.

Smithfield, N. C.—Town Commissioners have appointed N. M. Lawrence, N. B. Grant, and E. H. Brooks a committee to investigate cost of constructing electric light plant, water works, and sewerage systems.

Cuyahoga Falls, O.—Mr. C. M. Walsh has applied for franchise to furnish the village with light, heat, and power, and for a 10-year privilege of using the streets and alleys of the town for wires.

Galion, O.—Resolution providing for a vote on a bond issue for \$100,000 for municipal electric lighting plant is irregular.

Hamilton, O.—Bids for \$20,000 4½ per cent. electric light bonds will be readvertised, to enlarge, improve, and repair the electric light plant.

Toledo, O.—A franchise has been granted the People's Heat and Power Company, to operate a heating and power plant; the company has agreed to spend \$60,000 on the west side of the Maumee River and \$100,000 on the east side within two years.—Homer T. Yarnan, Promoter.

Youngstown, O.—Members of Council who have made a study of municipal lighting are favorably considering the establishment of a power plant in connection with the proposed Berlin dam, to furnish light for the city.

Bend, Ore.—It is very probable that Bend will soon have its business streets lighted. The proposed lamp burns gasoline. Connected with each burner is a small gasoline tank. There is also an automatic clock contrivance, which can be set at any desired hour, at which hour the lamp will go out. The lamp is guaranteed to light up a circle within a radius of 600 feet.

New Bedford, Pa.—Arrangements are being made with the Mahoning & Shenango Valley Railway & Light Company to supply the town with electricity; it is planned to have a street lamp at each corner.

Williamsport, Pa.—A petition is being circulated in South Williamsport, asking the Borough Council to grant the Citizens' Company permission to erect poles and run its wires through the streets of the borough, for the purpose of furnishing light to such South Side people as might desire it.

Providence, R. I.—The special committee of the Board of Aldermen on the City Hospital has recommended that the Narragansett Electric Lighting Company be permitted, at its own expense, to install a system of underground wires, conduits, and appurtenances, on the premises of the City Hospital on Eaton street. The electricity to be used for light and power will then be purchased at meter rates, effecting a saving of \$14,000 for an electric plant, exclusive of the wiring and appurtenances, and nearly \$500 per annum over the cost of maintaining the plant.

Florence, S. C.—Arrangements have been made for the city to own its light plant; to begin with, it will only be for the purpose of street lights, but later it is probable that commercial lights will also be installed.

Decatur, Tex.—E. H. Bumgaertner has purchased the electric light plant and will take possession January 1.

Centralia, Wash.—Council has granted a franchise to B. H. Petley for gas privileges for 25 years; illuminating gas is to be furnished to consumers at rates not to exceed \$2 per 1,000 cubic feet for the first five years; \$1.50 for the second five years, and \$1.25 for the remainder of the life of the franchise; the company is to pay the city 2 per cent. of the gross receipts, and the city reserves the right to purchase the plant at any time after giving six months' notice.

FIRE EQUIPMENT

Pasadena, Cal.—On recommendation of Mayor Early, Council has authorized the purchase of equipment for the new fire buildings on Mentor avenue and Dakota street.—A. M. Clifford, Chief, Fire Department.

San Diego, Cal.—Chief Eugene Donnelly, of the Fire Department, and members of the Fire Commission are trying to provide means for the installation of fire-fighting apparatus at Middletown.

Santa Rosa, Cal.—Arrangements are being made to build City Hall and Fire Department building.

Greeley, Col.—Arrangements are being made to establish a paid Fire Department; apparatus will also be procured.—W. R. Patterson, Chief.

Peru, Ind.—The only fire engine house in the city burned; a new one will be built.

Whitefield, Mont.—Council is preparing to build Fire Department building.

Holland Patent, N. Y.—The citizens of this place are organizing a fire company.

Oswego, N. Y.—The fire alarm system of the city is to be inspected, overhauled, and rewired.

Akron, O.—The manufacturers in the South End of the city are endeavoring to have a fire station established in the vicinity of the many large factories in that locality.

Wilkes-Barre, Pa.—The Finance Committee has recommended the purchase of a new aerial fire ladder truck.

Viborg, S. D.—A fire company is being organized.—C. H. Olsen, Foreman.

Tyler, Tex.—The citizens of North Tyler have petitioned for improved fire protection.—Address City Clerk.

Pleasant Valley, W. Va.—The citizens have voted \$5,000 bonds for building headquarters for Fire Department.

Tacoma, Wash.—Council has been directed to have plans prepared for the construction and equipment of a fire tug.—Address Chairman Richards.

Beloit, Wis.—Council is considering purchase of a new steam fire engine, chemical engine, 1,000 feet of new hose.—E. E. Goss, Fire Chief.

Cedarsburg, Wis.—At the special election for the purpose of issuing bonds for a site and for erecting and equipping an engine house, the measure was defeated.

PUBLIC BUILDINGS

Washington, D. C.—The Commissioners will include in their estimates to Congress an item for the construction of a public convenience station on the Government reservation at the intersection of Seventh street, K street, and Massachusetts avenue northwest, and will provide in the proposed legislation that such portion of the reservation as may be needed for the purpose shall be transferred from the jurisdiction of the War Department to that of the Commissioners; the station will cost approximately \$25,000.

For constructing a 16-room school building, costing \$125,000, in the Howard subdivision, the Commissioners have purchased

six lots on Fourth street, between Pomeroy and Grant streets, northwest.

Atlanta, Ga.—City officials and Fulton County Commissioners, Clifford L. Anderson, Chairman, contemplate erecting jointly a City Hall and County Court-house, to cost \$1,000,000.

Dublin, Ga.—City contemplates voting on issuance of bonds to erect market-house.—Address the Mayor.

Cambridge, Mass.—The Board of Aldermen is considering appropriation of \$40,000 for the construction of new Police Station in district.—Chas. H. Lobe, President.

Gloster, Miss.—The city will erect City Hall; plans by P. M. Kennedy; contractor, M. E. Dye; two-story brick building; 40x85 feet; electric lighting; cost, \$7,500.

Chillicothe, Mo.—At the election recently, the proposition for the issuance of \$100,000 bonds for the construction of a new Livingston County Court House was defeated.

Greenville, N. C.—Bids will be received, November 24, for the purchase of \$75,000 35-year school bonds.—F. M. Wooten, Mayor.

Mansfield, O.—The voters of Richmond County will decide on the proposition to issue \$15,000 bonds for Court House improvements.

New Castle, Pa.—Bonds bearing 4½ or 5 per cent. will be issued to secure funds for constructing the new High School.—M. Louis Hainer, Mayor.

Pine Grove, Pa.—The State Armory Board, Harrisburg, will invite new proposals for the construction of an armory here, on modified plans, bids previously received being above the appropriation.

Pittsburg, Pa.—A resolution authorizing the preparation of estimates on the cost of the new market house, so that the kind of material is not specified and the height of the buildings may be ten stories or less, and appropriating \$1,000 for the employment of an architect to prepare plans, has been approved.

Bartlett, Tex.—The Attorney-General has approved an issue of \$16,000 40-year 4½ per cent. school bonds.—Address City Clerk.

Corsicana, Tex.—The Attorney-General has approved \$15,000 4½ per cent. 15 to 40-year school bonds.

Glenwood, Tex.—The citizens have voted \$14,000 bonds for constructing school house.—Address Clerk of the Board.

Handley, Tex.—An election will be held, November 2, to vote on the question of issuing \$15,000 school building bonds.—Address Clerk of the Board.

Houston Heights, Tex.—An ordinance is before Council, authorizing issue of \$20,000 bonds for constructing school house.—Address Clerk of the Board.

Richmond, Tex.—Plans and specifications for fireproof three-story Court House, with basement, containing 23 rooms and costing not more than \$70,000, are invited from architects; for further information address D. R. Pearson.

Wichita Falls, Tex.—The city will erect City Hall, for which bonds were voted; two stories; brick; 110x47½ feet; mill construction; probably steam heating; electric lighting; cost, \$12,300; architect not yet selected.—T. B. Noble, Mayor.

STREET RAILWAYS

Washington, D. C.—(1) The concessionaires for the construction of railways in Argentina (Lavinas, Pali & Cia and Emilio A. Carrasco, both of Buenos Aires) request short term tenders in regard to such construction. (2) Argentine Government harbor works, estimate, \$9,000,000 (approximately), steamers for Rio Negro; particulars of Eugenio Varelo, Buenos Aires. (3) Bids on 4,000 tons of Portland cement are requested by the Direccion-General de Vias de Comunicacion, Buenos Aires.—Address No. 1546, Bureau of Manufactures, Washington, D. C.

Athens, Ga.—Arrangements are being made to establish a new railroad, to be called the Atlanta & Carolina road; Messrs. M. Y. Edgerton, of Atlanta, Ga., and T. J. Shackelford, of this city, are interested.

Idaho Falls, Idaho.—A. V. Scott and a number of others have formed a corporation for the purpose of constructing, owning, and maintaining and operating an electric road from this place to Idaho; capital stock, \$10,000.

Byron, Ill.—Council has granted to the Rockford, Oregon & Southern Electric Road a 50-year franchise.

Joliet, Ill.—Franchise has been granted to the Joliet & Southern Traction Company to build interurban road to New Lenox.

Woodstock, Ill.—A new road is proposed between Woodstock and Sycamore, to be called the Woodstock, Marengo, Genoa & Sycamore Electric Company; it is proposed to make Woodstock the north and Sycamore the south terminals, although if the enterprise is a success extensions will be made in the future; the promoters of the company are all of Chicago.—Colonel M. W. Powell, President.

Clinton, Ia.—The Wenatchee Valley & Northern Railway Company has been incorporated, with a capital of \$100,000, by L. Lamb, Frank W. Ellis, and others.

Des Moines, Ia.—The Des Moines City Railway Company will build a car line to Norfolk.

Coffeyville, Kan.—The people have voted \$30,000 bonds for the Coffeyville & Memphis road, to enable them to build a line from here to Centralia and Vinita.

Traverse City, Mich.—The Electric Land & Development Company is planning to build four dams on the Manistee River, in Wexford county, to generate power for an electric railway, and lighting of towns in northern Michigan, and for private use.

Crookston, Minn.—W. A. Martin, of this city, has been granted a franchise for a trolley line.

Bellefontaine, O.—The Ohio Electric Railway Company has purchased a tract of land 33 acres in length, near Lewis Reservoir, Logan county, on which it will erect a power house for the Bellefontaine-Lima line.

Butler, Pa.—The citizens are promoting the construction of an electric line from Meadville, by way of Franklin, to Pittsburg.—Address City Clerk.

Harrisburg, Pa.—A charter was issued by the State Department to the East Erie Connecting Railroad, to construct a line two and a half miles long in the suburbs of Erie; the capital is \$25,000.—Matthew C. Griswold, Erie, President.

West Newton, Pa.—The West Penn Railways Company has secured a right of way for a new line between Hunker and Scott Haven, connecting with West Newton; the line will connect with the McKeesport and Scott Haven line at the latter point, and will run across the Youghiogheny River over a new bridge to Hunker, traversing a portion of Sewickley Creek.

Fort Worth, Tex.—The St. Louis Southwestern Railway has decided to expend about \$500,000 in establishing proposed freight terminals at Fort Worth, improvements to include grading, yard tracks, two-story brick freight warehouse, steel spans on concrete masonry piers, and abutments across Trinity River, etc.—M. L. Lynch, Chief Engineer.

Morgantown, Va.—The Morgantown Interstate Railroad Company, with W. W. Smith, Counsel, is arranging to make a number of improvements and extensions in its plant; will begin in the near future.

Centralia, Wash.—With the granting of a franchise to the Centralia-Chehalis Electric & Power Company by Council, an electric line between Centralia and Chehalis is assured; Centralia granted a franchise to the same company several weeks ago, but nothing could be done until Chehalis had also granted a franchise; B. J. Weekes, of Tacoma, the promoter of the enterprise, is prepared to commence work at once and promises to have cars running within a year.

Tacoma, Wash.—The Seattle-Tacoma Short Line Company has been organized, with a capital stock of \$1,500,000, to build an electric line to Anaportes; Incorporators are: Benjamin F. Weeks, who will be General Manager of the concern, and a number of others.

Ashland, Wis.—A. E. Appleton, who secured control of the Ashland street railway system, announces that he will extend the interurban line between Ashland and Washburn; the line will be run with power from Copper Falls.

BRIDGES

Melbourne, Ark.—The Izard County Quorum Court voted an appropriation of \$2,000, to be used in building a bridge across the Pincy, in the west end of the county, and one across the Strawberry, in the east end of the county.

Nevada City, Cal.—The Board of Supervisors has decided to notify the Placer County Board that this county is ready to stand its share of the expense in building a new steel bridge across the Bear River Bottom, between Dutch Flat and You Bet.

Sioux City, Ia.—Street Commissioner Tom Ford will file a special report with Council for rebuilding Cook street, Market street, and West Sixth street bridges.

Iola, Kan.—Council will take up the matter of constructing a large cement bridge; Commissioner J. S. Walker will give further information.

Iowa, Kan.—The Big Wichita River has cut in behind south pillars of bridge, four miles south of Iowa Park; pillars damaged and approaches in danger; new spans thought to be necessary; confer with Commissioner E. A. McCleskey for further information.

Takoma Park, Md.—Council is considering the construction of a concrete bridge across the Sligo stream; a number of residents have volunteered to contribute several thousand dollars to the project; the bid of R. Seek to

repair the present bridge for \$500 is also being considered.—Address Mayor Platt.

Lynn, Mass.—A bridge will be erected across Little River, cost not to exceed \$1,500.

Greenwood, Miss.—The Leflore County Board has ordered an issue of \$40,000 road and bridge bonds, payable in 20 years, and bear interest at the rate of 5 per cent.—G. S. Pate, County Treasurer.

Carthage, Mo.—A special committee has been appointed by Council to investigate the condition of the East Chestnut street bridge; the committee is empowered to contract for the construction of a new cement bridge there immediately, if such a step is deemed advisable.

Joplin, Mo.—The estimated cost of constructing steel viaduct, with cement approaches, as desired by the Kansas City Southern Railroad, is \$91,000, made by the Midland Bridge Company, of Kansas City, Mo.

St. Charles, Mo.—The County Court of Lincoln County will hold a session with the St. Charles County Court, in relation to the construction of a bridge over Cuivre River at Old Monroe, joining the two counties, to cost \$10,000.

Cincinnati, O.—Councilman William Fahrnenbrück will introduce an ordinance for a bond issue of \$26,000 for a lift bridge over the canal, in place of the present Mohawk bridge.

Columbus, O.—At the November election, the question of issuing \$1,000,000 bonds for the establishment of grade crossings will be submitted to the voters.

Portland, Ore.—Bids are invited for a reinforced concrete bridge on East Twenty-eighth street over Sullivan's Gulch; the ordinance authorizing the construction was passed several months ago, but the City Executive Board failed to advertise for bids.

West Chester, Pa.—The Commissioners of Chester County will ask for bids for the erection of an extension of side annex to the old county bridge over the Brandywine, in Downingtown, in the near future, when plans and specifications are expected to be completed; the addition will be a six-foot-wide sidewalk on the south side of the stone arch bridge; it will extend over the creek on steel and iron brackets, held to the stone structure by long iron rods.

York, Pa.—Mayor McCall has called the attention of Council to the dangerous condition of the bridge at Richland avenue over Hoke's Run, and urges the appropriation of funds for construction of concrete bridge.

Manchester, Tenn.—The Quarterly Court of Coffee County made an appropriation of \$2,800 for building a bridge over Duck River, at the mouth of Riley's Creek.—Frank Womack, Chairman of the Board.

Richmond, Tex.—Fort Bend and Wharton Counties have definitely decided to construct a steel bridge across the Bernard River, at a cost of \$10,000.—Address Fort Bend County Commissioners.

Spokane, Wash.—Bonds, \$400,000, will be sold in 60 days for the construction of city bridges, bearing 4½ per cent. interest; no bids were received for bonds at 4 per cent.—Robert Fairley, City Comptroller.

Prof. W. H. Burr recommends that the city build a new bridge at Monroe street, which will cost \$250,000.

Racine, Wis.—The Chicago & Northwestern Railway Company will build a new and modern steel bridge across Root River, with double tracks, to take the place of the old one, which is now being strengthened temporarily and made safe until next spring.

Vancouver, B. C.—The necessary data is being gathered preparatory to calling for tenders and construction work on the abutments for bridge across the Second Narrows by the Vancouver, Westminster & Yukon Railway Company.

MISCELLANEOUS

Pasadena, Cal.—Bids are asked for sprinkling streets for one year, from January 1, 1908; it is possible the city may decide to do its own work, which will necessitate an expenditure of \$8,000 to buy horses and wagons.—John Beyer, Superintendent of Streets.

Sacramento, Cal.—In order to starve the rats, Dr. Fox, of the Health Board, has suggested that steps should be taken to enforce ordinance and compel the general use of proper covered garbage receptacles.

Waterbury, Conn.—Installation of a new garbage disposal plant is under consideration, and members of the Health Board in their investigation will make trips of inspection to crematories in the vicinity of New York City.

Washington, D. C.—The Central Electricity Station, Vilna, Russia, requests no term tenders for the supply of one dynamo, one water-tube boiler, 240 m., and one steam turbine, 500 horsepower.—Address No. 1545, Bureau of Manufactures, Washington, D. C.

Dublin, Ga.—Council has called a bond election for December 9 for bonds as follows: \$20,000 for street paving; \$20,000 for enlarging the water works and installing a Game-

well fire alarm system; \$25,000 for a grammar school for whites and a school for negroes; \$5,000 for a public park.—Address Mayor Phillips.

Springfield, Ill.—The Illinois Senate has adopted a joint resolution providing for the submission to the people to vote on \$2,000,000 bond issue to proceed with the deep waterway project.

Indianapolis, Ind.—The Police Department intends to purchase a double-cylinder, high-power motorcycle and speedometer.

Glasgow, Ky.—There will be an important meeting shortly to discuss the question whether or not bonds should be issued to improve the streets by a rock crusher and increased fire fighting facilities.

Lynn, Mass.—Bonds will be issued in the sum of \$24,000, to be used: Little River bridge, \$2,300; city repairs, \$1,800; Cobbet School improvements, \$1,200; street improvements, \$4,000; sidewalks and crossings, \$1,700; schoolhouses, \$13,000.

Cadillac, Mich.—The Electric Land & Development Company will dam the Manistee River, at a cost of \$8,000.

Blue Earth, Minn.—The Faribault County Commissioners have decided to place a steel dam at the outlet of Walnut Lake, the source of the last branch of the Blue Earth River.

Roswell, N. M.—The matter of issuing \$165,000 sewer and water bonds will be submitted to a vote of the people.—Address James F. Hinkle.

Canandaigua, N. Y.—At a special election it was voted to appropriate \$1,000 to be used in building and maintaining in the mouth of the outlet of Canandaigua lake bulkheads, or gates, to permit of the control of the flow of water in that stream so as to at all times enable the village authorities to flush the stream and dilute the sewage, and to appropriate \$1,500 to provide for the removal of the stagnant water at the pier and otherwise improve the pier at the lake, from a sanitary point of view.

Hamilton, O.—Bids will be readvertised for bonds for the \$20,000 Market street sewer, \$20,000 electric light improvement and the city's portion of the West Main street improvement bonds, those received being below par.

Massillon, O.—Bids will be received, October 31, for the purchase of water and sewer bonds; interest 4½ per cent., payable in three to eleven years, inclusive.—J. H. Douglas, Secretary.

Allentown, Pa.—Ordinances have been passed for laying 8-inch main on Third street, from Liberty street 60 feet northward; appropriating \$1,875 for the construction of the retaining wall on Lawrence street; \$2,365.22 for paving at West Park; \$5,412.66 for sewer on Turner street; \$2,500 for sewer on Fifth street, from Whitehall to Sumner avenue; \$3,750 for sewer on Liberty street, and \$5,097.12 for paving intersections; providing for laying of a 6-inch main on Spruce street, between Gordon and Liberty.

Columbia, S. C.—Citizens of this city and of Elmwood will vote on proposition to annex territory of the latter suburb to Columbia, which will necessitate the expenditure of \$14,000 for a water works system; \$4,500 for the necessary amount of sewerage; and the installation of lights.—Alderman F. W. Segers, Chairman, Committee on Civic Improvements.

Nashville, Tenn.—It has been voted to issue \$200,000 bonds to extend the water mains into a recently annexed suburban territory; the proposals to issue \$400,000 of bonds for extending connections of the municipal electric lighting plant, and \$50,000 to build new pavements in the city and newly annexed territory, were defeated.

BIDS RECEIVED

Phoenix, Ariz.—The Board of Control has awarded contract to F. O. Mackey to drill an artesian well at the Industrial School at Benson, to be of 10-inch casing for at least 900 feet, at \$5 per foot, and the next 600 feet of 10-inch casing, if the contractor finds it feasible to drill a hole that large, and not smaller than 8-inch, at \$6 per foot; also 8 or 6-inch casing below 1,500 feet, if required, at \$10 per foot for 300 feet; it is believed ample water can be found at not to exceed 1,200 feet, and possibly 700 or 800 feet, but the territory is protected, as the contractor gets no money until the well is completed or driven as far as the Board sees fit to continue its experiment.

Whipple Barracks, Ariz.—Abstract of proposals for the construction, plumbing, hot water heating and electric wiring of post hospital at Whipple barracks by the Constructing Quartermaster: Newell Brothers, Los Angeles, Cal., \$3,330 for plumbing and \$4,495 for heating, with alternate bid of \$3,250 for plumbing and \$4,385 for heating, if awarded both contracts; F. E. Newbery & Co., St. Louis, Mo., \$975.86 for electric wiring; J. H. Mulrein, Prescott, \$3,475 for plumbing and \$650 extra for Italian marble; \$3,985 for heating and \$7,400 for heating and

plumbing; Wm. Evans, Phoenix, \$3,700 for plumbing, \$2 per square foot extra for Italian marble, \$4,700 for heating, \$550 for electric wiring, \$3,950 for heating or plumbing, contract to be for all or none; Chas. F. Haney, Prescott, \$42,500 for construction, with deduction of \$1,624 for concrete blocks instead of brick and \$1,000 for concrete block instead of stone for under pinning.

Pasadena, Cal.—The Fort Wayne Electric Works were low bidders for supplies for the municipal electric light plant, but a representative of the Westinghouse Electric Company asked for a test of transformers and meters, and the request was welcomed by the Fort Wayne representative, who announced that his company had frequently won in just such tests; contract for carbons and cylinder oil was awarded B. F. Kiernell, Jr., Company, as they are needed immediately, but action on other supplies was deferred.—C. C. Glass, Superintendent, Lighting Plant.

Pasadena, Cal.—E. Schilling has been awarded contract for the improvement of Lake avenue, from California street south to Hawkeye street, at 45 cents for oiling; 14 cents for cement gutter; 31 cents for cement curbing; \$1.97 for grading, and 12½ cents for cement sidewalks.—C. J. Van Ornum, City Engineer.

Sacramento, Cal.—Eleven bids for sites for the new City Hall have been received by the Board of Trustees. The bids are: First, George Kromer: Lots 5, 6, 7 and 8, J and K, Thirteenth and Fourteenth streets, \$97,336; right reserved to remove all buildings; gives a frontage of 320 feet on K street by 160 deep. Second, J. B. Devine: East half of lot 1 and all of lots 2, 3 and 4, M and N, Eighth and Ninth; all the buildings reserved, \$87,700; gives a frontage of 280 feet on M street by 160 feet deep. Third, James B. Devine: Lots 2, 3 and 4, M and N, Eighth and Ninth; all buildings on lot 2 reserved; \$75,200; gives 240 feet on M street by 160 feet deep. Fourth, Martyr, Westlake & Nichols: Lots 5 and 6, Tenth and Eleventh, I and J; gives 160 feet square on J street, \$125,000. Fifth, D. J. Simmons: Lots 5 and 6, and the east half of lot 7, M and N, Sixteenth and Seventeenth; gives 200 feet on N and 160 feet deep; \$30,000, or \$25,000 with buildings removed. Sixth, Huston, Ball & Turner: West 40 feet of lot 6 and all of lots 7 and 8, Ninth and Tenth, H and I; gives 200 feet on I street by 160 feet on Ninth street; \$100,000. Seventh, Huston, Ball & Turner: West 70 feet of lot 7 and all of lot 8, Ninth and Tenth, H and I streets; gives 150 feet on I and 160 feet on Ninth; \$80,000. Eighth, Wright & Kimbrough: Lots 1, 2, 3 and 4, H and I, Ninth and Tenth streets; gives 320 feet on H by 160 feet deep; \$100,000, with buildings reserved. Ninth, George Dierssen: West half of lot 6 and all of lots 7 and 8, I and J, Thirteenth and Fourteenth, giving 200 feet on J and 160 feet in depth; \$92,000. Tenth, J. D. Cornell: Lots 6, 7 and 8, H and I, Eighth and Ninth; gives 240 feet on I by 160 feet in depth; \$93,000, all buildings reserved. Eleventh, Bertie Groth: Lots 1, 2 and 3 and the west half of lot 4, I and J, Twelfth and Thirteenth; gives 280 feet on I by 160 feet in depth; \$84,750.

Clayton, Ga.—The Falls City Construction Company, Louisville, Ky., has contract to erect Court House for Rabun County, costing about \$20,000.

Two Harbors, Minn.—Haugston & Johnston have been awarded contract to construct 900 feet of lateral sewer in Tenth avenue, for \$1,155.38, and 2,560 feet in Eighth avenue, for \$3,555.10.

Elkhart, Ind.—Bids for the construction of sewers in East Jackson, Hudson, West Franklin and Krau streets were received by the Board of Public Works from the Northern Construction Company, John W. L. Moran and J. M. Fishley, of Elkhart, Staples & Ackerman, of South Bend, and C. D. Bennett, of Cincinnati, O. The bids were as follows on the Jackson street sewer: Fishley—glazed tile \$22,318.92, concrete \$20,488; Moran—glazed, \$20,839.80; Bennett—concrete, \$20,026.70; Staples & Ackerman—glazed, \$20,973.70; Northern Construction Company—glazed, \$25,060.75, concrete, \$27,010.75. Hudson street sewer: Fishley—\$3,972.60; Moran—\$3,681.60; Staples & Ackerman—\$5,769.50; Northern Construction Company—\$3,958.75. West Franklin and Krau streets, one sewer: Fishley—\$1,559.10; Moran—\$1,585; Northern Construction Company—\$1,767.75; by an oversight Mr. Fishley did not include the Y's in his bid.

Evansville, Ind.—William Aufferhaar and the Anchor Roofing and Paving Company have submitted proposals to build concrete walks for \$1.80 a square yard, and Aufferhaar offered to build brick walks for 53 cents a square yard.

Fort Wayne, Ind.—The Board of Public Works has received bids for the last batch of cement sidewalks to be in this fall. For walks on Polk street, from St. Mary's avenue to DeGroff street, the contract was let to

the Moellering Construction Company, at 47 1/2 cents a lineal foot; other bids were as follows: Oscar F. Menefee, 66 2-5 cents; C. W. Gallmeier, 59 cents; Derheimer & Co., 58 2-3 cents.

Indianapolis, Ind.—The Board of Works has received bids for brick roadway in Maryland street, from Blackford street to point 590 feet west: Capitol Paving and Construction Company, \$4.10; gas, \$5 each; water, \$1 a lineal foot; sewer, \$1 a lineal foot. Marion County Construction Company, \$3.48; gas, \$5 each; water, \$1 a lineal foot; sewer, \$1 a lineal foot. George W. McCray, \$3.95. For brick roadway in first alley south of Henry street, from Delaware to Harmon street: Capitol Paving and Construction Company, \$2.05; American Construction Company, \$1.88; George W. McCray, \$1.97. For brick roadway in first alley north of Fifteenth street, from Ashland to Bellefontaine street: Capitol Paving and Construction Company, \$1.50; American Construction Company, \$1.56; George W. McCray, \$1.50. For cement walks on south side of Ohmer avenue, from University to Downey avenue: Marion Caldwell, 78 cents. For gravel roadway, cement walks and cement curb in Randolph street, from Southeastern avenue to Maryland street: J. Harry Roberts, \$2.18.

Wichita, Kan.—Bids have been received for the construction of bridge over the canal on Douglas avenue; the Cement Stone and Supply Company, of this city, offered to construct the bridge for \$9,765, and the Topeka Bridge and Iron Company for \$9,875; both were rejected.

Baltimore, Md.—Bids for the removal and final disposal of the city's garbage during the next ten years, beginning January 1, 1908, were opened by the Board of Awards, Mayor J. Barry Mahool, Chairman, October 1, there being three bidders, as against two when the bids were opened before and rejected because the members of the Board considered them too high; those submitting bids were the American Reduction Company, of Pittsburgh, Pa.; the Baltimore Product Company, of Baltimore City, and the Southern Product Company, also a local concern. In the bid made by the first-named concern, the American Reduction Company, it offered to do the work for the ten years at \$49,500 a year, using the Pittsburgh system, and to pay the city \$10,000 for the plant and equipment purchased or to be purchased by the city from the Baltimore Sanitary Contracting Company. The Southern Product Company proposed in its bid to remove and dispose of the garbage for \$57,000 during the year from January 1, 1908, to January 1, 1909, the price to be increased \$2,000 a year during each of the ensuing nine years. In addition, the company offered to pay the city \$100,000 for the plant purchased by it from the Baltimore Sanitary Contracting Company. In a letter to Superintendent of Street Cleaning Joseph L. Wickes, the same concern also stated that if, at the end of ten years, its contract is renewed, it will pay the city \$150,000 for the plant, and if the contract is not renewed at that time it will turn over the plant to the city free of charge. In the bid made by the Baltimore Product Company, of Baltimore City, that concern offered to remove and dispose of the garbage during the first year, from January 1, 1908, for \$58,000 a year, the price to be increased \$2,900 a year during each of the remaining nine years. It also offered to pay the city \$50,000 for the old plant. Both of the last mentioned companies propose to use the Arnold-Egerton system of reduction, which is at present being used by the Baltimore Sanitary Contracting Company. From the foregoing figures it will be seen that the individual totals of the bids are as follows: American Reduction Company, \$495,000, less \$10,000 to be paid for old plant, equal to \$485,000; the Southern Products Company, \$660,000, less \$100,000 to be paid for old plant, equal to \$560,000; the Baltimore Product Company, \$710,000, less \$50,000 to be paid for old plant, equal to \$660,500. When the bids were opened the first time it was found that the lowest submitted was that of the Southern Product Company, which offered to do the work for \$70,000 the first year, with the price to be increased \$3,000 a year during each of the ensuing nine years, making a total of \$835,000 for the ten years. At that time the company made the same offer for the old plant made by it in its bid opened to-day, viz., \$100,000. Thus it will be seen that the company is now offering to do the same work for \$175,000 less than it offered to do it some time ago. All the bids were referred to Street Cleaning Commissioner Joseph L. Wickes, who will tabulate and return them to the Board.

Cambridge, Mass.—Adolph Kern, of New York City, has been awarded contract for an incinerator, at \$25,975, on second lot of bids, the first lot having exceeded \$30,000 appropriation; it was proposed to increase the appropriation, but a trip of Mayor Walter C. Wardwell and Superintendent of

Streets George M. Chikas to other cities to examine incinerators convinced them that the plant could be built within the appropriation, and the one to be built will combine the best points of others seen.

Cape Ann, Mass.—Bids for furnishing the city with hose have been received, the bidders being the Cornelius Callahan Company, of Boston; Gutta Percha and Rubber Manufacturing Company, of Boston; Eureka Fire Hose Company, of Boston, and the Boston Woven Hose Company. The Fire Department Committee voted to purchase 2,000 feet of 2 1/2-inch hose and 200 feet of 3/4-inch hose, dividing up the contract between the Boston Woven Hose Company, the C. C. C. Company, of Canton, and the Eureka Fire Hose Company.

Grand Rapids, Mich.—Estabrook & Co., Boston, Mass., have been awarded \$250,000 4 1/2 per cent. flood protection bonds, at a premium of \$8,225; the bids received were as follows: Estabrook & Co., Boston, \$8,225; N. M. Halsey & Co., Chicago, \$6,197.50; Blodgett, Merritt & Co., Boston, \$5,700; A. V. Leach & Co., Chicago, \$5,150; Harris Trust & Savings Bank, Chicago, \$4,775; Kountze Brothers, New York, \$2,541.50; Michigan Trust Company, Grand Rapids, \$1,597.50; Emery, Anderson & Co., Cleveland, \$1,275. The Special Committee on Street Improvement Bonds of \$153,000 and the Sewer Construction Bonds of \$9,000 reported only one bid, of \$1,046.40, on the entire lot, and this was so low that it was not considered, especially as it was made in conjunction with a bid for the flood protection bonds.

Tekamah, Neb.—Contract for installing the new electric light plant has been awarded to Bortenlanger & Co., of Omaha; Mr. Bortenlanger will take the city's bonds at a small discount as payment for the work; the contract calls for one 125-h.p. Corliss engine, two 70-h.p. boilers, and one 75-k.w. dynamo.

Perth Amboy, N. J.—Bids were received as follows for new plungers for the Worthington pump at Runyon: Schantz & Eckert, who got the contract, \$495; the Perth Amboy Foundry and Machine Company, \$527.50; P. White & Sons, \$665; the Worthington Company, \$1,150.

Rochester, N. Y.—The Buffalo, Rochester & Pittsburgh Railway Company has let the contract for the construction of work between Brockwayville and Carmen, Pa., to Thomas A. Shoemaker, of Bellefonte, Pa.; the cost of the work will be \$900,000; several bridges are to be constructed, and a 1,200-foot tunnel will be bored.

Dayton, O.—Contracts for improving the Bumberger Park playgrounds have been awarded, as follows: John W. Boren, brick work, \$3,045; Michael Brothers & White, plastering, \$1,395.78; Louis F. Thiele, masonry, \$1,076; C. A. Wintersteen, sheet metal and roofing, \$1,305.30; Dayton Asphalt and Paving Company, concrete, \$7,688; Ware & Moodie, plumbing and heating, \$3,975; Engle & Gohn, carpentry, \$7,500; Wellmeir Brothers, painting, \$440; Irvin Deger, excavating, \$3,200; Dayton House Wrecking Company, wrecking, \$345; making a total of \$29,970.07.

East Liverpool, O.—Reinhart Brothers are low bidders for paving Pennsylvania avenue, their bid being on asphalt with old curb and concrete curb; a protest by contractors McCullen and Allison may result in a re-advertising of bids.

Hamilton, O.—W. R. Todd & Co., Cincinnati, have been awarded contract for \$12,075.81 West Main street improvement bonds, at par, earned interest, and \$50 premium.

Marion, O.—Messrs. Hofstetter & Dawson have the contract for paving McWilliams court, at \$1,448; Twentieth Century block, with stone foundation, will be used; Uncapher & Scott are low bidders for paving Mill street, at \$3,300; Athens block will be used; A. J. Brady will pave the alley north of Center street with Logan block, at \$1,347.

Marysville, O.—Charles S. David, Cashier of the Union Bank, was the highest bidder for \$19,700 worth of 5 per cent. paving bonds at Milford Center, offering a premium of \$137.15.

Miamisburg, O.—Wm. A. Hilt has the contract for the new storm sewer on Central avenue, at \$6,500.

Springfield, O.—M. J. Hannum has the contract for paving the alley between Main and High streets, and W. F. Payne will pave West Clark street; both bids include guttering.

Zanesville, O.—Pettit & Abele have the contract for paving State street, at \$1.03 per square yard; property owners on Brighton boulevard have recommended the paving of that thoroughfare with asphalt block; work will begin on this large improvement early in the spring.

Portland, Ore.—Bids for street and sewer improvements amounting to more than

\$260,000 have been opened, as follows, by the City Executive Board: Stark street, Warren Construction Company, \$15,708.39; Elizabeth street, Pacific Bridge Company, \$12,158.40; Warren Construction Company, \$12,953.31; East Twenty-first street, Stevens Brothers, \$1,406.86; Northrup street, Warren Construction Company, \$5,730.55; East Morrison street, Charles E. Pottage, \$3,980.51; Denver avenue, Miller & Bauer, \$3,469.01; Knott street, Warren Construction Company, \$11,200.13; Grand avenue, Concrete Construction Company, \$3,013.86; Williams avenue, Warren Construction Company, \$17,527.43; Pacific Bridge Company, \$16,703.48; Page street, Bechill Brothers, \$3,772.94; East Sixteenth street, Pacific Bridge Company, \$5,793.25; East Fourteenth street, Pacific Bridge Company, \$9,497.42; East Washington street, Pacific Bridge Company, \$16,415.11; First street, Warren Construction Company, \$18,434.86; Grand avenue, Warren Construction Company, \$1,502.42; Frankfort street, Stevens Brothers, \$11,509.57; Raleigh street, Star Sand Company, \$2,084.46; East Madison street, O'Neill & Co., \$10,523.46; Miller avenue, O. W. Olson & Co., \$908.90; Giebisch & Joplin, \$1,019.04; Lewis street, Star Sand Company, \$4,286.30; Gladstone avenue, Bechill Brothers, \$14,693.60; Keenan Brothers, \$14,255.43; J. R. Davis (part), \$1,400; Dixon street, Star Sand Company, \$1,834.60; Borthwick street, Bechill Brothers, \$1,402.32; Star Sand Company, \$1,369.96; East Flanders street, O'Neill & Co., \$1,802.53; Benton street, Bechill Brothers, \$2,175; Star Sand Company, \$2,148.29; Mallory avenue, R. J. Debuhr, \$4,882.29; Flint street, Bechill Brothers, \$3,309.83; Star Sand Company, \$3,254.76; Union avenue, H. J. Ewing, \$8,340; East Ninth street, Miller & Bauer, \$3,708.26; O. W. Olson & Co., \$3,835; Tacoma avenue, Miller & Bauer, \$3,177.65; O. W. Olson & Co., \$3,361.09; Maegley street, Bechill Brothers, \$533.10; R. J. Debuhr, \$503.85; East Sixth street, R. J. Debuhr, \$3,989.24; East Thirteenth street, H. J. Ewing, \$3,085.15; Vaughn street, Warren Construction Company, \$17,739.18; Twenty-first street, Barber Asphalt Company, \$11,428.46; Nehalem avenue, Miller & Bauer, \$2,224.20; East Twenty-second street, Pacific Bridge Company, \$5,382.47; East Twenty-seventh street, Pacific Bridge Company, \$6,937.15; Broadway, Warren Construction Company, \$13,783.57; Pacific Bridge Company, \$14,067.45; East Flanders street (sewer), John Keating, \$283.60; J. P. O'Neill, \$307.44; George Gordon, \$317.90; East Second street (sewer), George Gordon, \$810.70; Vista avenue (sewer), Bechill Brothers, \$517.40; John Keating, \$504.90; Marguerite avenue (sewer), J. B. Slemmons, \$6,337.95; W. T. Jacobsen, \$6,094; John Keating, \$6,204.88.

Harrisburg, Pa.—The contract for an addition to the armory at Pottstown was awarded to F. H. Kieser, of Pottstown, at his bid of \$5,000; G. W. Atwell, of Grove City, has been awarded the contract for an armory at Grove City, at his bid of \$16,000.

New Castle, Pa.—Lewis Meyer has been awarded contract for sewer in Chestnut street, from Ray to Cannon street, at \$405, and for sewer on Van Buren avenue, from Highland avenue to a point 41 feet east, at \$374.85; other bidder on Chestnut street sewer, on which the Engineer's estimate was \$349.64, was Ferry & Co., at \$701.80; other bidders on the Van Buren avenue sewer, on which Engineer's estimate was \$313.17, were Charles Stapf, at \$406.11, and Ferry & Co., at \$545.66; contract on Laurel avenue sewer, on which the Engineer's estimate was \$324.07, was awarded to Charles Stapf, at \$342.75; other bidders were Lewis Meyer, \$368, and Ferry & Co., \$473.60.

Philadelphia, Pa.—Proposals for a large amount of new machinery for the city's filtration plant have been received, the estimates for engines and pumps being found to be unusually close. The figures submitted by the Bethlehem Steel Company, in the first set of proposals ever turned in by that corporation for contract work with this city, were slightly lower than other competing concerns for the furnishing of two reciprocal pumping engines intended for the Lardner's Point station. The bid of the Bethlehem company was \$244,800, with a guarantee to place the engines in 450 and 550 days, respectively. This time limit was beaten by the Holly Manufacturing Company, which guaranteed to install the engines in 360 and 420 days, respectively. The Holly company has placed all other pumps at the station, and its bid for the last two, submitted yesterday, was \$268,769. Other bids for the pumps were from Walter Wood, \$294,000, time limit 560 and 650 days; the Southwark Foundry and Machine Company, \$272,900, 420 and 480 days, and the Allis-Chalmers Company, \$284,000, 500 and 600 days. Proposals for a centrifugal pumping engine for Torresdale were received as follows: Walter Wood, \$24,500, 75,000,000 gal-

TRADE NOTES

lons capacity, and the Allis-Chalmers Company, \$18,700, 78,000,000 gallons. Doyle & Co. submitted the only proposal for a turbine pump, their price for a pump with 94,000,000 capacity being \$15,476. Four bidders submitted proposals on three types of boilers for the Torresdale pumping station. The bidders were the D'Olier Engineering Company, whose bids were \$32,250, \$35,500 and \$35,840, according to the type of boiler; the Heine Boiler Company, which bid \$32,329, \$34,129; the Edgemore Iron Company, \$37,000, \$37,280, \$37,500, and the E. Keller Company, \$33,720, \$33,960 and \$34,034. For electrical equipment five bidders submitted estimates. Bids were taken on incandescent lighting equipment and cable. The bids were: D'Olier Engineering Company, \$27,465 for lighting equipment, \$24,322 for cable; Pennsylvania Electric Equipment Company, \$32,400 for lighting equipment, \$29,875 for cable; the Mack Paving Company, \$24,150 for lighting, \$30,456 for cable; Walker & Kepler, \$28,666 lighting and \$31,914 cable; and J. F. Buchanan, \$38,900 lighting and \$31,600 cable.

Scranton, Pa.—Bids received from Lee & McDonnell are as follows: For the paving of Dix court, between Mulberry and Vine streets, \$2.11 per square yard; for curbing, \$1.35 per lineal yard. For paving Irving avenue, between Linden and Mulberry streets, \$2.05 per square yard; for concrete curbing, 85 cents, and stone curbing 90 cents per lineal yard. Frank Egli was the only bidder for the grading of Alder street, between South Webster and South Irving avenue; he offered to do the work for \$1.32 per cubic yard.

Dallas, Tex.—The contract for laying a 6-inch sanitary sewer on Marsalis avenue was awarded to the Dallas Home Improvement Company, for \$227.90; the same bidder also got the contract for a sewer on Thomas avenue, on a bid of \$146.40; bids for furnishing pig lead for the Water Department were awarded the Crane Company, the total amount to \$1,604.25.

Salt Lake City, Utah.—The Board of Public Works has awarded the contract for sidewalk extension No. 131 to A. Campbell; three bids were received. J. D. Hanley wanted 17 cents per square foot for cement sidewalks, and 12 cents for grading; S. Birch offered to lay the cement for 16 1/2 cents a square foot, and do the grading for 8 cents, while Campbell wanted 15 cents for the cement and 5 1/4 cents for the grading; the total amount of his bid is \$3,207.60; this will cost the abutting property owners \$1.05% a front foot, while the assessment was \$1.10. A noticeable fact about the bids was the reduction in the price for laying walks, which has been the result of the cut of 60 cents in the price of cement.

Three bids have been received for the installation of a pumping station at Eighth West and Seventh North streets, to pump the sewerage from the new intercepting sewer into the old gravity sewer. The bids include the price of installing two pumps, an electric motor and a gasoline engine, with all appliances connected therewith. They were as follows: Fairbanks, Morse & Co., \$12,950; Salt Lake Hardware Company, \$15,325; Charles C. Moore & Co., \$19,500. The bids do not include the building of a pump house or the connection between the two sewers, which is to be made by wooden stave pipes. These contracts will be let later.

Seattle, Wash.—Bids for paving Yester Way, from Broadway and Thirty-second avenue, were declared "outrageous" by City Engineer Reginald H. Thomson, and the work will probably go over until spring, when new bids will be received. H. F. John & Co. were low bidders, at \$116,899.70; the Engineer's estimate was \$97,000.

Green Bay, Wis.—A five-year contract has been awarded to the Green Bay Gas and Electric Company to equip the streets with 165 lamps, of 2,000 candle-power, at \$70 per lamp per year, on all-night schedule, every night. It is stipulated that either the city or the company may apply to the State Railway Commission at some later time to settle upon a price for the light. If the Commission says that \$70 is too high, the company must, under the terms of the contract, rebate the difference between the \$70 and the price named by the Commission. If the price is too low, then the city is required to make up whatever difference may be found.

Bid of the Minahan Building Company for lighting the public buildings has been rejected by the city.

City of Mexico, Mex.—An English construction company has been granted the contract by the government of laying pavements and sewers in Puebla; the work is to be completed in three years.

Alarm System.—The Niagara County Home Telephone Company, Buffalo, N. Y., is preparing plans and specifications for installing an electric alarm system on the police patrol boxes in Buffalo. By the new arrangement a red light will flash on the top of the patrol box at the pressure of a button at Police Headquarters or in the Precinct Captain's office. The patrolman then will get into communication with Police Headquarters immediately. Police Chief Regan will have the system first installed in the residential precincts. There he believes it will be most useful.

Artificial Fuel.—The Drawbaugh Artificial Fuel Company, Harrisburg, Pa., recently gave a demonstration of a smokeless fuel in the furnaces of the boiler room at the Union National Bank Building, Pittsburg, Pa. The fuel is the invention of Daniel Drawbaugh, of Harrisburg, who years ago did valuable work in connection with the development of the telephone. J. C. Ewing, President of the company, states that the fuel will be put on the market at from \$4 to \$4.50 per ton, and he claims that one ton will do the same work as five tons of bituminous coal.

Brick Plant Wanted.—There are considered to be great possibilities in the way of brick and tilemaking in the vicinity of Centralia, Wash., if a company will take hold of the proposition in a business-like manner. An expert brick and tile manufacturer has made a thorough examination of the clay and pronounces it capable of making the very best brick and tile, provided the right kind of machinery is used. Most of the plants in the vicinity are reported to be equipped with out-of-date machinery and appliances.

Concrete Culvert.—James Ohayer & Son, Rockville, Ind., have designed and made a culvert of a new style. The culvert—the first one made was 20 inches wide and the arch had a diameter at the base of 6 inches—is built in three pieces, molds being used for the purpose. The arch is made in two similar sections, right and left. Over these a cap is placed so that no mortar need be used in setting the sections. It is claimed that a culvert of the size described can be built for from \$120 to \$140.

Experimental Filter.—The National Roche Filtering Company has been given permission by the Aqueduct Commission of New York City, President, John F. Cowan, to erect an experimental filter at the Jerome Park Reservoir, subject, however, to the consent of the contractors for the construction of the reservoir.

Fire Engine Test.—A test was recently made at Providence, R. I., of a third-size Metropolitan steam fire engine made by the American La France Company. The tests were as follows: Through two lines of hose, each 150 feet in length, and using a one-inch nozzle:

Time	Steam	Water
2:32 p. m.	120	100
2:33 p. m.	110	175
2:33:30 p. m.	120	220
2:34 p. m.	135	240
2:35 p. m.	140	250
2:36 p. m.	140	265

Through two lines of hose, each 150 feet in length, siamezed into one stream, using 1 1/2-inch nozzle:

Time	Steam	Water
2:42 p. m.	140	95
2:43 p. m.	130	155
2:43:30 p. m.	125	180
2:44 p. m.	140	250
2:44:30 p. m.	140	260

Through two lines of hose, each 150 feet in length, siamezed into one stream, using 1 1/2-inch nozzle:

Time	Steam	Water
3:00 p. m.	140	60
3:01 p. m.	140	150
3:01:30 p. m.	140	180
3:02 p. m.	140	210
3:03 p. m.	140	250
3:04 p. m.	140	250

Liens Against Paving Company.—The Interstate Paving Company, of Utica, N. Y., which has several paving contracts in Niagara Falls, N. Y., is having considerable trouble, it is asserted, in meeting claims, and a number of creditors of the company have filed liens with the City Treasurer. The last lien to be filed was that of the F. E. Dean Company for \$5,100. The total amount of liens filed up to date is \$16,839.31.

Nernst Lamps.—The Houghton County Electric Light Company, Houghton, Mich., will soon place eleven 80-candle-power Nernst lamps on College avenue, Houghton, Mich., thus making it one of the best lighted thoroughfares in the village. The price to be charged for three Nernst lamps will be the same as that charged for one arc lamp. The selection of style of light was made by the Street Committee after a trial of a single lamp for a week, during which inspections were made in all kinds of weather.

New Combination Wagon.—The Robinson Fire Apparatus Manufacturing Company, St. Louis, Mo., has recently delivered to the Fire Department of Paterson, N. J., an all-steel combination hose and chemical wagon. Chief Stagg weighed the wagon with five men on board together with a full equipment of fire-fighting tackle. The weight was 6,600 pounds exactly, the same weight as that of similar wooden wagons now in service. Three of these wagons have been ordered, the shipping bill for the last of which has already been received.

INCORPORATIONS

Allegheny River Mining Company, Bradford, Pa.; to excavate and bore for limestone, sandstone, shale, fire clay, etc., and deal in the manufacture of the same. Incorporators: Evan J. Jones, G. C. Deeter, W. R. Craig, and others.

Contractors' and Builders' Supply Company, Somerville, Mass.; machinery, tools, etc.; capital, \$30,000. President, Charles A. Landers, Somerville; Treasurer and Clerk, Frederick F. Haskell, Cambridge.

Globe Electric Specialties Company, New York, N. Y.; electrical contractors; capital, \$25,000. Incorporators: Harry Bissling, 419 West Forty-second street; Robert Oppenheim, 271 Broadway, New York; George H. King, 271 Broadway, New York.

Hartselle Electric Light and Power Company, Hartselle, Ala.; to establish a light plant. Incorporators: J. C. Rogers and others.

Logan Motor Despatch Company, St. Louis, Mo.; to establish and operate a freight and passenger line with motor power; capital, \$25,000. Incorporators: Albert L. Perkins and others.

Louisville Light and Water Company, Louisville, Mich.; capital, \$20,000. Incorporators: W. A. Strong, J. L. McCracken and others.

Phoenix Gas Improvement Company, Wilmington, Del.; capital, \$300,000. Incorporators: William L. Missimer, F. M. Shive, Harry W. Ravis, all of Wilmington, Del.

Putnam Development Company, Cold Spring, N. Y.; to manufacture cement and building materials; capital, \$6,000. Incorporators: Henry M. Brigham, 37 Liberty street, New York; Egbert V. Nelson, Cold Spring, N. Y.; Theron H. Sammis, Huntington, N. Y., and others.

Rochester Rotary Pump Company, Rochester, N. Y.; to manufacture pumps, piping, etc.; capital, \$50,000. Incorporators: Thomas T. Graser, Charles H. Rowland, Olof H. Nesturg, Rochester, N. Y.

Standard Ice and Light Company, Magnolia, Ark.; capital, \$25,000. Incorporators: L. J. Moore, A. J. Carter, Gus Kohn and others.

PATENT CLAIMS

867,941. Garbage Cremator. David E. Bennett, Nazareth, Pa. Serial No. 295,782.

In a cremator of the class described, in combination, one or more arched furnaces each having two connected garbage cells; a central partition wall longitudinally between said garbage cells and beneath the apex of the arch; a horizontal sectional garbage floor and an ash pit floor; a sub-superheating chamber below said garbage floor and said ash pit floor; dust collecting cisterns and spraying and dust deflecting devices located within said sub-superheating chamber; a fire grate; a carcass supporting grate with widely separated bars arranged in the vertical plane of the said fire grate; damper cells respectively having openings to the chimney, to said garbage cells, and to the sub-superheating chamber, and manually operable bar connected, simultaneously reverse acting, draft reversing and regulating dampers arranged in said damper cells.

867,945. Drain Tile. William H. Carson, Madison, Minn. Serial No. 357,841.

A composition tile comprising two longitudinally divided sections of equal size, each section having a longitudinally arranged tongue and an adjoining flat surface on one edge, and a longitudinally arranged recess and a flat surface on the other edge, said tongue and recess being oppositely arranged on the sections of each tile, whereby the edges of the tile will interlock when placed together, substantially as described.

868,025. Gate Valve. Anthony P. Smith, Newark, N. J. Serial No. 312,309.

The combination with a valve seat and a gate valve movable edgewise across the seat to open and closing positions and also flatwise toward and from the seat, of a reciprocating member, means for forcing the valve against the seat when in closing position by the movement of said reciprocating member relatively to the valve, a screw threaded operating rod, a screw nut on said rod connected with the valve for causing the valve to be reciprocated by the turning of the operating rod, and a screw nut on said rod connected with said reciprocating member, the first said nut having a collapsible thread to permit of continued turning of the rod after the valve has been moved to its closing position, substantially as described.

868,080. Fire Hydrant. William H. Featherstone, Chatham, England. Serial No. 342,129.

In combination, a bib cock, an auxiliary branch thereon, a valve in said branch, a lever for engaging the end of the valve spindle, a link for retaining the lever in a down position, a loop adapted to connect a hose to said link, a stationary jaw, a movable jaw adapted to hold the hose nozzle, a spring attached to an extension of the movable jaw, and a locking bar directly connected to the movable jaw.

868,092. System of Construction for Foundations, Dams, Sea Walls, and the Like. François Hennebique, Paris, France. Serial No. 371,219.

A caisson construction for foundations, dams, sea walls, and the like, comprising a plurality of vertically disposed cells, some of which are enlarged and open and others contracted and closed at their lower ends.

868,247. Thawing Furnace. Thomas D. Bausher, Reading, Pa. Serial No. 385,469.

In a thawing furnace, a rectangular casing adapted to rest on the ground, a closure adapted to be removably secured to the bottom thereof, a fuel support suspended inside said casing above the lower edge thereof, a stack passing through said casing and fuel support, a deflector plate suspended from said support below said stack and arms securing said plate to said support.

Proposals

STREET LIGHTING

Bids for Street Lighting Charleston, S. C., from June 30, 1908, for a Term of One, Two or Four Years

Charleston, S. C.

Sealed proposals will be received at the office of the City Electrician of Charleston, S. C., until 12 o'clock, noon, on November 15, 1907, for lighting the streets and public buildings of the City of Charleston, S. C., for a term of one, two or four years, with electricity, gas or some other illuminating power equivalent thereto, or partly by one and partly by another.

The estimate requirements are five hundred (500) arc lights of the inclosed type, to be supplied with an alternating current of not less than 6.6 amperes, under a pressure of not less than seventy (70) volts, and the electric energy of each lamp 475 watts, with an illuminating capacity of 1,200 (normal) candle-power. Gas to have five (5) foot burners, gas to be delivered at pressure of not less than 13 inches, and to be of standard commercial quality. Detail specifications of lighting will be furnished all bidders upon application to the City Electrician. Lights under this contract to be ready for operation on June 30, 1908. Certified check for \$350 to accompany each bid, and every bidder must be prepared to furnish a bond satisfactory to the Mayor to the penal amount of \$25,000, conditioned for the performance of his part of the contract, provided his bid is accepted. The city reserves the right to reject any and all bids.

ION SIMONS, City Electrician,
Charleston, S. C.

Approved:

R. M. MASTERS, Chairman,
Committee on Lighting.

WATER WORKS

Tucson, Ariz.

Sealed bids will be received at the office of the City Recorder of the City of Tucson, Pima County, Arizona Territory, until 8 o'clock p. m., of the 4th day of November, 1907, for the furnishing of all material and labor for the construction of a system of water works for said city, according to the plans and specifications now on file in the office of said City Recorder in the City Hall in said city of Tucson. All bids shall be made with the proviso in said bid contained that the bidder, if successful, will accept his pay for the work to be done, and material furnished, in fifty-year bonds of the city of Tucson, at par, said bonds to bear interest at the rate of 4½ per cent. per annum, interest payable semi-annually. A certified check in the sum of ten thousand (\$10,000.00) dollars, payable to the city of Tucson, must accompany all bids. The check of the successful bidder to be forfeited to the city of Tucson in the event said successful bidder shall fail to enter into a contract with said city for the construction of said system of water works, and furnish a good and sufficient bond for the construction of same, said bond to be approved by the Mayor and Common Council of the city of Tucson. The Mayor and Common Council of the city of Tucson reserve the right to reject any and all bids. A certified copy of the plans and specifications of said proposed water system will be sent to prospective bidders upon application to the City Recorder of said city of Tucson, accompanied by ten dollars.

CHAS. F. SLACK,
Mayor.
FRANK S. TREAT,
City Recorder.

FURNISHING AND LAYING SEWER PIPE AND BUILDING DISPOSAL WORKS

Auburn, N. Y., Oct. 12, 1907.

Sealed proposals will be received by the Mayor, Hon. E. C. Aiken, until 8 p. m. December 3, 1907, for the construction, first, of sewers and appurtenances thereto; second, for the construction of a disposal works for said sewer system. The sewers to consist approximately of the following: 14,700 feet of 8-inch, 11,300 feet of 10-inch, 6,000 feet of 12-inch, 3,600 feet of 15-inch, 300 feet of 18-inch, 1,250 feet of 20-inch.

Excavation varies in depth from 5 to 18 feet. There will be approximately 16,000 cubic yards of excavation, a part of the same being in solid rock. There will be about 17,000 feet of 5-inch vitrified tile for house sewer connections to be laid from the main sewer to the curb line. There will also be laid in the main trench and underneath the main sewer, as ground water demands, subsoil drains about as follows: 20,000 feet of 4-inch, 6,000 feet of 6-inch, 7,000 feet of 8-inch, 2,000 feet of 10-inch, 200 feet of 12-inch. All of the subsoil drain tile to be vitrified tile known as seconds. 84 manholes with an average depth of 9 feet, 12 flush tanks, 12 lamp holes.

The disposal works consist of reinforced concrete, septic tanks and contact beds, and automatic appliances for dosing them.

For the sewers a bond for an amount equal to double the gross amount of the contract, or a certified check for \$5,000, will be required of all bidders. For the disposal works a bond for an amount equal to double the gross amount of the contract, or a certified check for \$2,500, will be required of all bidders. The contract will be let in two sections—section 1 to consist of all sewers and appurtenances to the same, and section 2 of the disposal works. Bidders may bid on either or both. The Common Council reserves the right to reject any or all bids. Specifications, general plans and blank forms of proposal may be seen at the office of the City Engineer, J. Walter Ackerman, and will be ready for distribution November 1, 1907.

J. S. HANLON,
City Clerk.

NOTICE TO PAVING CONTRACTORS

The City of Fort Worth, Texas, expects to pave about fifteen miles of streets with brick, asphalt or bitulithic.

Standard specifications may be had on application to Mr. E. C. Woodward, City Engineer.

J. J. NUNNALLY,
City Auditor.

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